

InfoWorld

The Newsweekly for Microcomputer Users

APRIL 30, 1984

VOLUME 6, ISSUE 18

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InfoWorld

The Newsweekly for Microcomputer Users

Volume 6, Number 18

CW Communications, Inc.

April 30, 1984



AP/WIDEWORLD

Making connections in the photographic community has traditionally been handled on a catch-as-catch-can basis. With the advent of communications networks that cater to professional photographers and organizations that buy their work, needy editors and globe-trotting photographers find it easier to connect.

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With or without the help of their parents, more and more young computerists are entering the software business.

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Just as word processing makes writing easier, new software helps independent students learn about music.

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John Page, Fred Gibbons and Janelle Bedke, founders of Software Publishing, have made their company an industry leader. Their strategy is to market easy-to-use and inexpensive, yet powerful, software.

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On the TV show "Hawaii Five-O," Steve McGarrett was a tough, hard-driving chief of the Hawaii State Police. At least once every episode, he barked to his lieutenant, "Dan-O, get me the name and whereabouts of every man, woman and child in the United States."

We've come to expect large police departments, in cooperation with the FBI and other police agencies, to have this kind of information at their fingertips. The fact that the authorities have access to information about private citizens is considered an invasion of privacy by some. Social commentators have taken their cracks at the potential problems. Books have been written about the dangers. Laws have been passed to safeguard individuals from an all-knowing bureaucracy. But few people realize that the issue is being radically changed by developments that make our previous fears seem mild in comparison.

Our earlier apprehensions were based on computer technologies that are now outdated. Cheaper and more powerful computer devices will soon put into the hands of small groups and individuals enough storage capacity for them to stockpile mountains of information on their neighbors — enough information to rival yesterday's data banks of large institutions. Soon we'll all be capable of storing enough mailing lists on our computers to bury each other in blizzards of junk mail.

The potential for pirating information is also being increased by this new technology. Organizations such as credit bureaus are busy assembling and keeping track of personal information about private citizens. Once this information has been assembled, unscrupulous pirates can get into the system and download it — all they need is the storage capability to absorb the data. Hard disks that can hold up to 380 megabytes of information and can fit into almost any desktop computer are now available to handle the job. That's enough storage space to swallow the name and address of every man, woman and child in the state of Alabama — 3.89 million people. If this list were to be printed on 8½ × 11-inch single-spaced pages it would produce a stack roughly 24 feet high.

And that's only the tip of the iceberg. Storage devices are now being developed that use vertical-recording techniques. These will boost desktop data-storage capacity to 3 gigabytes within three to five years. Three gigabytes of data can store the equivalent of a paper stack 189 feet high (the height of a 19-story building). It's enough to keep tabs on 30.2 million people — more than the population of Canada. A few years farther down the road, new optical-recording techniques that employ lasers will let us store from two to ten times that amount. And we're talking about computer systems that individuals and small organizations will be able to afford.

With such technological capacity headed inexorably our way, legislative guidelines on the use of information will be knocked over like a bunch of flimsy sand castles at high tide. We may have to abandon the whole idea of protecting our right to privacy. At the very least, we'll be forced to make compromises in our handling of privacy issues. It's likely that a new ethic regarding the sharing of information will have to be structured.

It's now 1984. We all feared Big Brother and his computer. Instead, we are all about to become a swarm of little brothers and sisters, each of us with a vast capacity to store and manipulate information. What that means for our future is worth examining now.

This One



SNCG-C9K-AENW

More addresses

While your article on the proliferation of software for lap computers (March 19, 1984) was very interesting, you failed to give the address of the Portable Computer Support Group, the company that commercializes the Businesspak+ series of programs for the Tandy Model 100.

Why don't you make a standard practice of including at the end of the article, the addresses of all the companies mentioned in the preceding article? I believe a large number of your readers would find this very useful.

Geoffrey Fink
S/Seine, France

A number of readers have requested that we include addresses in InfoWorld articles. In the future, we will provide addresses wherever space permits, particularly for small or obscure companies and where we feel reader interest will be high. Portable Computer Support Group can be reached at 11035 Harry Hines Blvd., Dallas, TX 75223; (214) 351-0564.

— Editors

Atari blues

Upon my viewing of the February 27, 1984, issue of *InfoWorld*, I was greatly dismayed by the bold type on the cover, "Is Atari going down the tubes?" It strongly suggests the company's imminent demise.

As an Atari 800 owner, I found this quite distressing, and in reading the accompanying article found that it showed off the company's efforts to reorganize and keep itself afloat.

I know first hand that Atari has certainly had its share of troubles, but this kind of sensationalism only adds fuel to the fire. If Atari's public image is poor, you certainly don't help it any. In fact, I would say *InfoWorld* is giving it a pretty good burial.

I and the users' group I represent would certainly like to see Atari survive and feel that its line of computers, although often misunderstood and greatly underrated, deserves its place in the home-computer market.

Robert S. Hart
Los Angeles, CA

Missing keys

Please put back on Apple's otherwise marvelous Macintosh what Steven Jobs left off: cursor keys. The tried and true I-J-K-M diamond along with the Mac's Command key should do the trick. Mice are nice, but keys can be quicker,

especially for touch typists.

Robert E. Beebe
St. Louis, MO

NEC does well

I'd just like to comment that I received my first subscription issue of *InfoWorld* today, and one item in your New Products column saved me the entire cost of the subscription.

It indicated that the NEC Personal Computer Division was now bundling a free 8K upgrade and modem with the 8200 computer. I had purchased one on the previous Friday from a local dealer who, when asked, indicated he did not have any information on the offer.

A call to NEC in Elk Grove, Illinois, was answered promptly and knowledgeably by a woman who indicated that she would put the special offer coupon in the mail to me right away, and if I had any problems to call back. I must compliment NEC on their fine service and their excellent machine. It's unusual to find a computer company that will respond so promptly to the call of a single user.

I can also say that a subscription to *InfoWorld* is worth more than the cost of the subscription.

Daniel J. Gingras
Manchester, NH

AT&T continued

This letter is in regard to Stewart Alsop II's commentary regarding AT&T entitled "A critical look at AT&T" (*InfoWorld*, March 26, 1984).

Amen.

Doug Monhana
Philadelphia, PA

Last week I received a letter from the phone company telling me I could purchase my phone at a discount. I knew I could, but I wanted to buy a different model. I called the friendly people at AT&T (the 800 number) and a woman told me to go to my local service center, exchange my phone, lease it for a month or two and then purchase it at a discount.

At the service center, the manager said he didn't have one in stock — he'd have to order it. It'd be in on Tuesday. On Tuesday, I tried to call the service center.

The phone book said to call the business office to find the service center's number. But it was after 5:00 P.M., so I called Information. Their computers were down. I rang the operator. After a few minutes of explanation, she passed me on to the supervisor who gave me the number. When I dialed the number, I discovered it had been disconnected. After

explaining my problem to a new operator, I was given to another supervisor who called the number for me. Same message. The supervisor switched me to Information — I guess their computers were back up. The new number was also disconnected.

All I wanted to do was call the phone company. Calling the operator again, I got a fourth supervisor and a customer service manager who informed me they must not have the phone company's new numbers yet. And by the way, I will be charged for all my calls to Information. (I knew I should have bought some stock.)

Calling the ever-helpful AT&T hot-line (800) number, I was told the service center's phones probably weren't working yet. (I wished I could laugh.) But he did confirm, by computer, that my phone was now in stock at the phone center.

At the phone center, I was told they don't publish a phone number. "The last thing we want is for people to call us about problems — this is a service center." (I'll bet the military has something to do with this operation.) And, not only is my phone not in stock, they don't even take orders. Now I really have the urge to reach out and touch someone.

David B. Dillehunt
Orangeburg, NY

Clarification

In our cover story "Software gambles: Company strategies boomerang" (April 2, 1984) we said that Spinnaker Software was "rumored to have run out of cash for their operations and [is] searching for new money." In fact, according to company chairman William Bowman, searching for new money is fact of life for Spinnaker. Since its founding in early 1982, the company has had three rounds of financing (including \$800,000 in April of 1982, \$1.5 million in December of 1982, and \$5 million in November of 1983) with leading venture capitalists and institutional investors participating in each round.

With Spinnaker's tremendous growth rate (often as high as 20% per month) Bowman says that the company needs new investments every eight or nine months. He expects to have to be in the market for more money this summer, but says that the company has a \$5 million line of credit to draw on, that it has been operating profitably since last July (three months earlier than originally forecast) and that Spinnaker closed its fiscal year at the end of January 1984 with a healthy net profit.

Please write to Letters, InfoWorld, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025. Letters selected for publication will be edited for length and clarity.

Academics seek computer patron

BY GARY B. PALMER, Ph.D.
Contributor

As a professional anthropologist, I stay alert to evidence of subcultural variation, but it turned up quite unexpectedly at a recent trade show. There I found an exotic subculture of computer merchandising, with expectations and verbal habits quite different from my own. A colleague and I attended the conference with the ulterior motive of hoping to find a patron for our new Center for Computer Applications in the Humanities.

The center is designed to assist academic humanists and dispel the horrors of incompatible personal computers appearing on the desks of our faculty. But, with no firm institutional funding yet in sight and a trade show virtually in our back yard, we set out to convince some philanthropic manufacturer of the virtue of using the center to showcase its product. As a noncommercial "third party" in the emerging academic market, we would simply try to assure that our commercial Godfather would be one we could live with comfortably.

Our hopes were boosted by reports appearing in computer journals proclaiming the generosity of manufacturers, as in the following from *InfoWorld*: "Many computer firms are helping to fuel the interest in computers by providing research funds and massive donations of equipment that may someday turn today's universities into electronic campuses" (January 9 & 16, 1984).

But at Comdex, instead of philanthropists, we found cool-headed businesspeople who looked upon us not as a tax write-off, but as a source of "product." "We would like to help you, but you will have to deliver product," was the word from the bored representative of a fancy English 8-bit computer with marvelous networking capabilities. Even before coming to Comdex we spoke to the representative of an established line of business computers anxious to cultivate the market in higher education. "We will give you computers to use for software development, but we want to see product within

six months," the representative said.

This was our first exposure to "product" as a mass noun. It seems to convey the idea of numberless items to be sheaved and harvested, like wheat or sheep. We must admit this strange use of the term confirmed our stereotype of the shallowness of marketing values, just as our bumbling approaches must have confirmed some of our intended victims' belief in the naivete of academics.

Although we failed at Comdex, we still see a need for cooperation between computer companies and universities. But manufacturers should seek long-term security rather than short-term profits. They should try to provide products that are appropriate and encourage applications that truly advance educational goals. We need vertical integration, academic style. If a company has no interest in nourishing the mind, it should not pretend to philanthropy in higher education.

Companies that work closely with universities introduce their computers to students and other faculty, get early notice of significant new applications and learn their market. As a general rule, professors should not be asked to produce a commercial product and surrender it to a company as payment-in-kind for the loan or gift of microcomputers.

Left to their own devices, faculty will develop nifty applications with potential commercial value, but professors of history and foreign languages should not be spending research and teaching time giving an instructional program the commercial polish best achieved by experienced programmers. A humanities professor is unlikely to produce a program that would impress Hayden Software with its commercial prospects.

As we strive to realize the promise of computing in the humanities by building a small microcomputer network, we will continue to cast about seeking the odd private patron and shopping for the illusive great bargain. In the interest of efficiency and innovation, we would prefer to pool our academic expertise with the manufacturing and programming skills of one far-sighted company. But first the subcultures of the academic humanities and computer merchandising must find a set of mutually agreeable expectations. Is it possible to come to terms? We would like to hear the other side.

Gary B. Palmer is associate director of the Center for Computer Applications at the University of Nevada.

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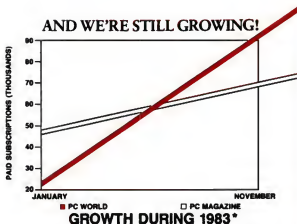
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FROM THE NEWS DESK

Peachtree's Decision Manager: Peachtree Software is preparing to make its move into the integrated-software market later this month with software called Decision Manager. The cornerstone of the product is Peachtree's own window-management system, which will control the other applications on an IBM PC XT.

Aimed primarily at executives, the product will be based on a full data-base-management system, according to a company spokesperson. A "simplified" word-processing module will also be included, though it will probably not be suitable for long writing projects. A communications module, a micro-to-mainframe link and graphics are also slated to be included. A spreadsheet module rounds out the product.

While Decision Manager will require the PC XT's hard disk, the company did not give any minimum RAM (random-access memory) requirement. (It will probably require it to be in the neighborhood of 512K.) No price was available at press time.

Germany's Fair of Fairs: A number of significant announcements were made at this year's Hannover Fair in Germany. The 8-day monster event, which covers a number of different industries, including the computer industry, was attended by some 650,000 people. IBM alone had 500 people working its exhibit.

Among the interesting new products, Epson showed a lap-size computer with a pop-up 8-line by 80-character liquid crystal display. Like the firm's more limited HX-20 system, the PX-8 lap machine will include a built-in microcassette for storage. MicroPro showed the machine running versions of WordStar and CalcStar stored on an EPROM (electronically programmable read-only-memory) chip.

Commodore, which has long been a major player in the European computer market, showed a new and as yet unnamed machine based on the 16-bit Zilog Z8000 chip. Commodore is manufacturing the chip under a licensing agreement with Zilog. The system also has a proprietary graphics chip made by Commodore.

The computer was not officially on display, but our roving reporter, Luc Sala (editor of the monthly computer magazine *Micro/Info* in the Netherlands) managed to get an hour of hands-on experience with a prototype unit. "It's a good-looking machine, but Commodore still has some work to do," said Sala.

Slated for shipment in the U.S. and Europe by the end of the year, the computer has 256K RAM, two 1.3 megabyte disk drives (totally incompatible with any other drive on the market, according to Sala) and a 15-inch color monitor display with an extremely crisp 640 x 400 dot resolution. It will also include a specially designed version of Coherent, a Unix Version VII-compatible operating system made by the Mark Williams Company in Chicago. Sig Hartmann, head of Commodore's software division, claimed Coherent on the new Commodore machine is better than other versions of the Bell Laboratories' Unix operating system on the market, because it has been specifically adapted to the Commodore micro and will have a number of new, easy-to-use features. A spokesperson for Mark Williams said the firm already has several software packages planned for the new machine, including word-processing, spreadsheet and data-base programs.

Commodore also showed its new IBM PC-compatible transportable, based on a design licensed from the Canadian firm Bytecom, which makes a similar unit called the Hyperion. It's expected to be extremely price competitive with the IBM PC, but U.S. shipment is not expected before 1985.

Look for more coverage of the Hannover Fair in our next issue.

Hewlett-Packard discounts: Apple isn't the only company wooing students with discounts on its personal computer. Stanford University students, faculty and staff members can now get Hewlett-Packard personal computers at 45% below list price. Called the HP Microdisc program, the campus discount brings the price of the HP-150 touch-screen computer — with two 3½-inch disk drives, the MS-DOS operating system and system utilities — down to \$2,200. Also included in the discount are HP plotters, printers, HP Series 200 and HP Series 80 computers and software. The discount will also apply to a new lap-size computer HP plans to bring out this summer. The program only covers one product of one type per year per individual. According to an HP spokesperson, universities are most interested in portable units. The discount is the beginning of a permanent nationwide price slash for university students and employees. "We feel permeating the campus environment will be a good way for HP to get more visibility," said the spokesperson.

Light pen works with IBM PC: A new light pen, capable of working with IBM's monochrome and color monitors, was announced by The Lite-Pen Company of Los Angeles at the recent Comdex Winter show. The new pen, which sells for \$295, works with the IBM PC or PC XT. The company has already begun shipping the PC version and a PCjr version will ship beginning May 1.

The pen comes with eight software programs. Among those are a graphics system for drawing lines and objects, a spreadsheet program, a text editor and several games, including backgammon and a version of Othello. The company also plans to introduce programs that will let the pen work with software such as 1-2-3 and WordStar.

David Needle, news editor

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Mail-order firm investigated

Programming International, a mail-order software firm, is under investigation by the FBI. Angry customers have accused the firm of taking orders and then failing to send the software ordered. **11**

IBM PC to communicate with large systems

IBM has announced several products that will allow its Personal Computer line to communicate with larger IBM systems. IBM also announced a new color monitor for the PCjr. **12**

Anti-hacker legislation expected

California state legislators are considering computer trespassing bills designed to strengthen the current computer-crime code. **12**

Chuck Peddle helps Victor

Chuck Peddle, former president of Victor Technologies, plans to help his former company manufacture and distribute a new computer called the PlusPC, an IBM PC-compatible system. The PlusPC was announced by Victor in December 1983, but the company has been unable to complete the product on its own. **14**

PCjr to receive second disk drive

Falcon Technology of Kent, Washington, has announced a "jr extender" for the IBM PCjr. The disk drive will be available in June and will provide as much as 256K of additional RAM for the jr. The extender also includes an enhanced version of MS-DOS 2.1. **15**

News Briefs

15

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MAIL-ORDER SOFTWARE FIRM UNDER FBI INVESTIGATION

BY KATHY CHIN

Reporter

The recent problems of Programming International (PI), a mail-order software firm (*InfoWorld*, January 2, 1984), have reached national proportions. The FBI is now investigating the practices of the Palo Alto, California, business run by Jim Dixon and Heather Islip.

When the FBI concludes its probe, it will turn the case over to the U.S. attorney general's office, which will determine whether to prosecute, according to FBI investigator Ben Cumbi.

Since last October, a number of customers nationwide have complained that they did not receive software from the firm after placing orders by mail or telephone. Programming International is no longer taking orders and creditors say the firm is attempting to recoup the costs to all its former customers. PI recently sent form letters to its customers saying that reimbursements would be delayed "due to financial circumstances."

Hawaii ophthalmologist Gilbert Yamamoto received one of the letters. Last June, he ordered a program called Cross-Talk for the Apple II Plus, but he never received it. He said he made numerous calls to the operation and wrote as many as nine letters, but got no response.

"This type of operation gives other software mail-order houses a bad name," he said. "Now I'm going to check with the Better Business Bureau before I buy anything like this. It's a shame to be paranoid, but I just have to protect myself."

The firm owes *InfoWorld* more than \$100,000 in advertising fees and *Byte* and *Popular Computing* magazines another \$80,000. These and other publications now refuse to run its ads.

According to owner Jim Dixon, the company originally was and still is a minicomputer consulting firm. When the firm entered the mail-order business, a purchasing agent was hired to order products. Dixon said that the purchasing agent "loosely managed" the inventory and ordered products that could not possibly sell. That caused shipping to fall behind. Meanwhile, advertising bills accrued and the company ran out of cash.

A former employee has a different opinion. The former sales rep (who prefers

to remain anonymous) said Dixon and Islip didn't have the money to pay suppliers for orders they were taking over the telephone. "They were just dishonest," she said. The sales rep said that she was told to take orders for products and promise that the software would arrive within two weeks, despite the fact that most of the requests wouldn't be filled.

Although Programming International attorney David Harvey said the firm had a large inventory, the former sales rep said sometimes the company accepted money for products it did not have in stock. She said that she and other sales reps were told by Dixon and Islip to tell customers that orders would be filled shortly.

Nancy Hershner, who works in customer service at Programming International, disputed that claim. She said sales reps who promised quick delivery "took it upon themselves" to do so. Hershner said the firm had an "overexpansion" problem that was compounded by disorganization after the firm moved to Nashua, New Hampshire, so it could fill orders without charging sales tax. The company has since moved back to California, she said, and callers are referred back to the Palo Alto number. "We do want people to contact us," she said. "We would reimburse

people overnight if we could."

Hershner said the company expanded too fast, had a large amount of its capital in inventory and "cash flow got to be a problem." When that happened, she said, the firm stopped taking orders.

She said the company has filled 80% of its orders by offering refunds, products or updated equivalent products. It hopes to fill all orders "in a month or two," she said.

The former sales rep charged that PI established a Nashua telephone number in an attempt to stall for time until the company's problems could be resolved. She said that this number was answered by a business called Software-to-go (though callers usually received no answer at all). Hershner disagreed, claiming that the Nashua number belonged to Programming International, not Software-to-go, and was answered by PI employees.

In the meantime, the California Consumer Affairs division in Sacramento has received at least ten calls from frustrated customers. In Nashua, the Better Business Bureau (BBB) came up empty-handed and referred the case to the state attorney general's office. Since the state's jurisdiction extends no further than its boundaries, the office referred it to the FBI for further investigation.

WHAT TO DO IF YOU GET STUNG

If you feel you have been burned by Programming International or any other firm, you can find justice if you know where to go for help, according to Brenda Adams of the California Consumer Affairs Division.

You should start by contacting the company and requesting an explanation. If the firm repeatedly fails to respond, then call the local consumer protection agency, Better Business Bureau or district attorney, says Adams.

If these sources fail to provide help, customers should contact their state consumer affairs offices. Adams says the California Consumer Affairs unit handled 180,000 complaints last year and responded individually to each consumer.

"Save your receipts, make copies of the letters, note down all phone calls," she warns. The more evidence you have, the more legitimate your case will appear.

If the complaint involves a mail-order company, you should obtain the complaint forms available at all post offices and send them to the U.S. Postal Inspector Service at 850 Cherry Avenue, San Bruno, CA 94098.

A number of Programming International customers were able to get their money back by stopping payment through banks and credit-card companies.

If a company has already filed bankruptcy, getting a refund is more difficult. According to Adams, you must find out in which court the bankruptcy is filed, because only that court can determine which creditors are to be paid.

Bankruptcy courts establish deadlines for filing claims against a company. Only those filing by the deadline are eligible to be paid. The deadlines, notes Adams, vary from court to court. "That's why it's important to file right away."

IBM products let firm's PC communicate with larger systems

BY MARGUERITE ZIENTARA

Senior Writer

IBM has announced several products that will allow its Personal Computer to communicate with larger IBM systems, reflecting a deepening commitment to its PC as an element of office-automation systems.

The firm has introduced a \$429 color monitor for the PCjr, videotex capability for the PCjr, PC and PC XT, as well as several new software packages, including word-processing software that makes the IBM PC similar to the firm's more

PC XT, Portable and 3270-PC. When operating under DisplayWrite 2, PC workstations can exchange documents with an IBM 8100 distributed data-processing system.

DisplayWrite Legal Support, for use with DisplayWrite 2, is a spelling aid that contains about 16,000 legal terms. It costs \$165.

DisplayComm BSC, priced at \$375, is a binary synchronous communications (BSC) program that lets IBM PCs, PC XTs and Portables send DisplayWrite 2 documents to other PCs, Displaywriters and host computers.

IBM did not introduce its long-awaited local-area network, which led some analysts to speculate that the firm has run into technical difficulties.

expensive Displaywriter.

The DisplayWrite software series is similar to the current software for the Displaywriter. A new program called PCWriter resembles programs for IBM's 5520 Administrative System and its System/23 Datamaster.

In addition to software that makes an IBM PC act like a Displaywriter, IBM is offering a \$495 connection kit for any unit in the PC series that will allow connection to and exchange of documents with a Displaywriter. The kit includes a cable and two disks. This product eliminates what has been a major impediment to using IBM PCs in an office that uses Displaywriters. It has been impossible to use a PC (running under PC-DOS) to edit or revise text that was written on a Displaywriter.

Furthermore, a document prepared at home using a PCjr and DisplayWrite 1, for example, can now be revised and printed at the office on an IBM PC using DisplayWrite 2 with provided conversion utilities, the company said.

The DisplayWrite word-processing series includes four programs. DisplayWrite 1, priced at \$95, was designed for the PCjr but can also be used with the PC, PC XT and Portable.

DisplayWrite 2, priced at \$299, features a 100,000-word spelling-verification aid. Designed for medium to light typing loads, the software runs on the IBM PC,

Chris Yalonis, director of the microcomputer group at Creative Strategies International in San Jose, California. "The PC has just 10% or 20% less functionality, flexibility and power when compared with the Displaywriter, and it is just not worth paying twice the price [for the Displaywriter's extra 10% - 20%]," he said.

The PCWriter word-processing software package, priced at \$199, includes spelling verification for 120,000 words and can be used with the IBM PC, PC XT and Portable computers.

The videotex capability, for the PCjr (\$220), IBM PC (\$250) or PC XT (\$250), allows users to receive or send data. Videotex images can be stored on disks for later viewing. IBM also announced that its letter-quality 5218 print wheel printer — designed to be used with the Displaywriter — can now be attached to and shared by four PCs and/or PC XT's. Attachment requires a \$220 kit for each PC unit, which includes a cable and printer driver program. The printer-sharing device for up to four units costs \$625.

In addition, IBM PC, PC XT and 3270-PC workstations connected to IBM's Professional Office System (Profs) programs running on its 4300 series and other VM/370 processors can now transfer electronic mail and files to other PC workstations within the Profs network, using the \$200 Profs/PC².

IBM did not introduce or mention its long- and eagerly awaited local-area network, which potentially could allow complete and easy communication among all its products. The omission led some analysts to speculate that the firm has run into technical difficulties.

The announcement led some industry observers to question whether IBM is phasing out the Displaywriter. "Not at all," an IBM spokesperson said.

"It's a recognition on IBM's part that the PC has eroded and cannibalized a large part of the Displaywriter's sales," said

California lawmakers to consider proposed anti-hacker legislation

BY PEGGY WATT

Reporter

California legislators will weigh restrictions on computer trespassing against free speech rights in hearings this month.

State senator John Doolittle calls his version the "browsing bill," assemblyman Sam Farr has dubbed his the "trespassing bill," and the state attorney general's office calls the bills "joyriding legislation." They both deal with the same problem: computer users who tap into private files and sometimes disrupt governmental and corporate systems.

Under existing California law, it is a felony for "unauthorized persons" to "access, alter, delete or destroy" any

computer system if malicious intent is proved. Farr's assembly bill would strengthen that, making it illegal for unauthorized users to knowingly access a system whether or not they intend to do harm, and would allow a misdemeanor to be charged even if the trespasser is merely looking. Doolittle wants to maintain violations as felonies, but insert a "wobbler" clause, allowing the prosecutor to "wobble" charges down to a misdemeanor when appropriate.

But a trio of computer consultants from Farr's Santa Cruz district worry that a new, more restrictive law could be misused. "My main concern is simple communications," says John James, who runs a bulletin board out of his home to keep readers posted on relevant legislative

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affairs. With more people "telecommuting," sometimes the telecommuter's only contact with coworkers is over the computer, he says.

Anton Dovdyaitis says he worries about the phrase "without authorization." Sometimes phone numbers show up on bulletin boards because owners want them to be used, he says. He suggests that the companies that don't want visitors on their computers should take more care with security, at least posting an electronic warning at entry. "Electronic 'no trespassing' signs are all over, especially all over the ARPAnet," says longtime hacker Steve Kudlak.

But Los Angeles deputy district attorney Clifton Garrett, who is prosecuting a half dozen computer-crime cases at any given time, says an electronic warning shouldn't be necessary. "Somebody who knows enough to get there knows enough to know they're not supposed to be there," he says. Some systems, such as videotex services, balk at warnings. "They say, we want legitimate users to enjoy the system, not get heavy, scary warnings every time they sign on." Requiring a warning could complicate prosecution, he adds. "It's like saying, we're not going to prosecute your burglary because your locks weren't good enough."

Garrott is reluctant to spell out specific instances when he has been unable to prosecute under current law, because he doesn't want to tip off electronic trespassers to "safe" territory. But he says his greatest concern is for the future. Applying theft laws to cases of stolen computer time won't always work, he says. "We have to remember the right of a company and clients to expect its private files to remain private." He thinks that the facts of the individual case should determine whether the charge should be a felony or a misdemeanor.

Linda Cabatic, a California assistant attorney general who helped write the first draft of Farr's bill, says she has heard from prosecutors who want to file a case but don't feel the circumstances warrant felony charges. She says the state needs to deal with "joyriders" who "cruise through the personal files of others" and who may not be malicious but sometimes cause damage.

Cabatic recognizes the possibility that employers might use the law to prevent employees from using computers to communicate. But she suspects that office policies on using company equipment won't change when computers are used, and tolerant employers won't seek legal recourse any more than they do when an employee uses an office phone for a personal call.

Even the American Civil Liberties Union (ACLU) has gotten into the act,

warning legislators not to infringe on basic communications rights. "To us, if there's no evidence of a problem, they can't prosecute," says Margie Swartz, an ACLU legislative advocate. "Prosecuting for 'unlawful access' is just too broad. I don't think we should start making that a crime. Someone coming into my office and using the telephone could probably be prosecuted for petty theft, but I don't think we want to go to that extent." She says that the ACLU watched and approved California's initial computer-crime law, passed in 1979, but thinks it doesn't need to be broadened.

"Simple access is too broad to be considered malicious," agrees Jeff Ruch, a researcher for the Assembly Criminal Law and Public Safety Committee, where computer-crime legislation is heard. "It's not quite clear what they're trying to criminalize that isn't already covered. It's important to design a bill to solve a specific problem. It's one thing to say we need to take care of future situations you can't describe, but another thing to draft a bill to deal with it."

Doollittle wants to keep the felony designation for initial charges to emphasize the seriousness of the offense, aide Lee Bennett says. "When someone taps into a system, the potential for causing

hundreds of thousands of dollars of damage is there."

Farr's aides say the bill isn't intended to clamp down on hackers, but simply to give the district attorneys more specific laws to work with. "We're concerned about giving too much discretion, building in too many exclusions," says Barbara Lloyd, who is coaxing the bill through the Assembly. "That's why the definition of 'knowingly' is important—that it be clear the person knew not only that they were doing it [accessing] but also that they weren't supposed to be there." She doesn't want the definition of "authorized" to be drawn so tightly that it excludes unwitting first-time intruders.

The Santa Cruz consultants are skeptical that the bureaucrats in Sacramento really understand computers and hackers. James says pirated numbers have shown up on his bulletin board, but he monitors and deletes such information as a point of honor. "Hacking used to be an honored term," laments Kudlak. "It's not that there are more people out there on computers, but there is a different caliber of people. Now we get people who break in and say, 'Oh boy, I got in, see? See? I'm gonna do it again.' They may be sorely misdirected kids, but I don't want to see them sent to the penitentiary."

Victor's former president plans to produce firm's PlusPC computer

BY PEGGY WATT

Reporter

Victor Technologies of Scotts Valley, California, while still ironing out terms of a sale to placate creditors in bankruptcy court, is getting a helping hand from a former president who hopes to take charge of Victor's announced, but yet-to-be-manufactured PlusPC computer.

Chuck Peddle, who stepped down as Victor's top officer last November, is still a major shareholder and supports the company he founded three years ago. Pending the bankruptcy court's blessing, Peddle, a pioneer in the microcomputer field, says he plans to license with Victor to manufacture and distribute the PlusPC.

Peddle and partner Bob Taylor want their unnamed company to design and arrange manufacturing for the PlusPC, an IBM PC-compatible system that will also be available as an add-on to the Victor 9000 computer. It will be distributed through Victor's marketing channels, which include Applied Computer Techniques of the United Kingdom, a company that is currently in the process of buying



Chuck Peddle

most of Victor's operations.

Peddle, the inventor of the 6502 chip and a former Commodore designer, says he is enthusiastic about getting back into the nuts and bolts of computer design. "Programming is one of the very few

everyman skills that can give you a special kind of thrill. It's roughly equivalent to a very good dancer completing a good performance, a very good painter finishing a work or a very good author writing a book that sells well. When you do a design and you get to make it work, there's a

moment of joy. There's a little bit of creativity and a little bit of conquest. It's like a fix, to get that creative thrill."

He promises that the PlusPC, which was announced at Comdex Fall in December of 1983, will be out in time for the National Computer Conference in Las Vegas

this July. "Shows have been the thing that've directed me all my life," Peddle jokes. "We'll have it by then."

Peddle and Taylor operate a consulting firm and expect to have other projects, but Peddle says he is pleased to carry Victor's banner.

Floppy-disk drive for PCjr to provide 256K of additional RAM

BY SCOTT MACE

Senior Writer

The IBM PCjr will soon have a second floppy-disk drive, but it won't be from IBM.

Falcon Technology of Kent, Washington, announced it will sell a \$995 "jr extender" for the PCjr starting in June. The jr extender includes a 5¼-inch disk drive and sockets for as much as 256K of additional random-access memory (RAM).

Some dealers have blamed slow sales of

the PCjr on the machine's limited 128K RAM and the lack of a second 360K disk drive. (See *InfoWorld*, April 9, 1984.) The jr extender addresses both of these problems and also includes an enhanced version of MS-DOS 2.1, which the firm says will allow the PCjr to run IBM PC programs without modification.

The jr extender plugs into the expansion panel on the right side of the PCjr and includes a master power module for the computer, the monitor and the extender. Also included is one general-purpose

hardware expansion slot.

The jr extender is a bit smaller than the PCjr console and is styled similarly to it. IBM is expected to announce a second disk drive for the PCjr later this year.

Options available for the extender include a port for a mouse and a battery-powered clock.

Falcon says the jr extender system lets users put together a computer with the capabilities of an IBM PC (minus the IBM's keyboard) for \$634 less than the current list price of a PC.

The founder of Falcon Technology is Tim Paterson, author of the MS-DOS operating system and MSX-DOS, a similar operating system that is compatible with the MSX home-computer standard established by Microsoft.

NEWS BRIEFS

1-2-3 stop! Lotus Development, the producer of the top-selling 1-2-3 applications software for personal computers, has settled a \$10 million lawsuit it filed against Rixon. Lotus charged the Silver Spring, Maryland, company with making unauthorized copies of the Lotus 1-2-3 program and documentation, which Rixon then allegedly distributed to its branch offices throughout the country.

Under the settlement, Rixon agreed to investigate the allegations of copying and to return all unauthorized copies of 1-2-3 disks and documentation in its possession. Without admitting any wrongdoing, Rixon also consented to a permanent injunction that prohibits it from making or using copies of 1-2-3 in the future. Rixon also agreed to pay the Cambridge, Massachusetts-based Lotus an undisclosed amount of money as part of the settlement.

In an unrelated development, Lotus announced it will not exhibit its products at the Comdex Fall show in Las Vegas. "We are currently in the process of evaluating our trade-show participation," says Daniel Moss, director of marketing programs. Apparently, the rapid proliferation of trade shows during the last year has encouraged the software firm to look closely at which shows it wants to attend. Carrie Snyder of Lotus says that the company will "continue to have a major trade-show presence."

No SOAP for pirates: H&H Scientific, creators of the Stock Option Analysis Program (SOAP) for the Apple IIe and IBM Personal Computer, has come up with a new and devious method of protecting its software against pirates.

The IBM version of the stock-analysis package is not copy protected at all. However, if you want to use the Dow Jones News/Retrieval service (and thus take full advantage of all the features of SOAP) you must return the original program disk to H&H. The Fort Washington, Maryland, company will then encrypt your Dow Jones password onto the disk. The password becomes a permanent part of your program disk and any copies will carry your Dow Jones password.

"We think that very few purchasers will be willing to give a copy of a program containing their password to a friend and thus risk incurring even modest usage charges," says Hersch Pilloff, president of the company. "In effect, the user's password is held hostage (by the user himself) to guarantee the security of his personal program." H&H Scientific, 13507 Pendleton Street, Fort Washington, MD 20744.

Next, the computerized marketing department: "Computer, sell thyself." That's the advice from a vice-president of a company that creates computer demonstrations to help computers sell themselves. Bill Schoneman of XXCAL in Los Angeles, says that computer dealers and manufacturers have only begun to tap the

potential of computers as marketing tools.

The company has developed the Computer-Assisted Sales Tool (CAST), which is used by Epson America for in-store demonstrations of the QX-10 personal computer. The CAST demonstration uses a combination of preprogrammed displays and interactive question-and-answer sessions that demonstrate the various applications of the QX-10. The CAST presentation can be interrupted at any time to provide detail about a specific function.

Words, words, words: The current crop of computer buyers are more interested in doing word processing at home than people who have already purchased home computers are, a new study says. Talmis, a market-research firm, found that 54% of those planning to purchase a computer, compared to only 40% of those who already own computers, are strongly interested in word processing. Entertainment activities are also high on the list of desires.

According to the study, 7.5% of U.S. households owned a total of 6.2 million computers at the end of 1983. Half of those were purchased during the last quarter of that year. (30% of that last-quarter buying is attributable to purchases of Texas Instruments' 99/4A home computers following TI's drastic price reductions. The cuts occurred after TI decided to stop manufacturing the machine.)

Tom Shea, reporter



Celebrities congregate in the Waveform booth at the West Coast Computer Faire. Barbara Leary, Timothy Leary and Robin Williams stand out amongst the crowd.

Guess who was at this year's West Coast Computer Faire (don't look at the picture)? If you guessed **Robin Williams**, alias **Mork from Ork**, you may have already won an *InfoWorld* InvisiPrize.

Yes indeed, the onetime star of the popular television series, "Mork and Mindy," was there at the Faire, checking out alternative on-screen entertainment: outer-space video games. "I have an Apple IIe and an Atari 800 at home. I just use them to play a few games for relaxation," Williams told a reporter. "I guess I'm not really into it like the rest of these people."

Sharp-eyed San Franciscans are often treated to the sight of Williams, who lives in nearby Marin County, wandering around his favorite haunts in the city. Williams was at the Faire simply to browse through the exhibits. He isn't endorsing any products — yet. As he nonchalantly strolled through the Faire aisles, curious spectators whispered to one another, "Hey, doesn't that guy look like Robin Williams?"

"Naah, couldn't be," was a common response.

Nolan Bushnell, notable for launching and jumping entrepreneurial ships with the perfect timing of a video-game champion, rolled out his latest brainstorm at a recent Boston Computer Society meeting.

BOB/XA (Brains on Board/Expandable Androbot), the latest personal robot from Androbot (which Bushnell controls) made quite a splash until a hapless little girl accidentally disconnected its head, thinking that BOB was its look-alike predecessor, Topo, which responds by moving to a tap on top.

In front of a capacity audience, Bushnell fielded such questions as: "What will

happen to all the dogs displaced by BOB?" ("They'll become curiosities, like old cars.") And "Can BOB go up and down stairs?" ("No, but it's really tacky not to have an upstairs robot.") At \$4,000 for a typical system, we think lots of people will settle for being tacky.

The personal robot will ultimately replace the personal computer, Bushnell

promises prospective developers.

Insisting that there will soon be a robot in every home, far-sighted Bushnell (the man who brought you now-bankrupt Chuck E. Cheese) predicted that the ultimate configuration (for Bushnell, at least) will come along quickly: "A Cray 1 on CMOS in the shape of Bo Derek."

Macho-man supreme **Clint Eastwood** got to enjoy himself in a unique way when Atari showed the game **Firefox**, a laser-disk arcade game named after Eastwood's movie of the same name. It is the first



Clint Eastwood likes to play himself.

video game to use actual film footage.

The game puts players in the seat of **Firefox**, the Soviet war plane that Eastwood flew in the role of Major Mitchell



Nolan Bushnell desires a robot with a more shapely configuration.

says, because "it's unnatural for people to go over to a keyboard and type." He thinks the computer should come to you and the keyboard should go the way of the pogo stick.

Bushnell invites all software developers to try their hands at creating the VisiCalc of robotics. "We don't know what it will be, but we'll help you market it," he

Gant in the film.

Winners, aside from hearing the sweet strains of victory music, get the added yahoo of hearing Eastwood's voice saying, "Nothing can touch us now. Better ice up a cool one, I'm coming home."

Yeah, we're sure it makes his day.

Denise Caruso, reporter

What do people say about Beck diskettes?

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John Gantz

OMENS IN SHORT SALES?



April is the cruelest month, breeding
Lilacs out of the dead land, mixing
Memory and desire, stirring
Dull roots with spring rain.

— T.S. Eliot, *The Waste Land*

The words of the great sourpuss poet come to mind as we contemplate the last six months of personal-computer stock activity. Ever optimistic, we might not go so far as to call the current landscape a wasteland, but it does have an air of the tundra about it.

And though spring has stirred the crocuses — giving signs of life to companies like Vector Graphics and Fortune Systems and buoying up the sale price of recent new issues — the lilacs still seem far from bloom.

Or are they?

Consider the "short sale." Most of the time in this column we have concerned ourselves — as most stock buyers do — with the purchase of equities in the hope that they will appreciate in value.

But there's another way to make a buck in this business. If you believe the world will end with a whimper (or a bang, for that matter), you can always sell short.

In essence, what you do in a short sale is borrow stock (from the broker) and promise to pay it back at some future date. You sell before you buy. If the stock price has dropped when you buy back the shares to return to your broker, they're cheaper than the ones you sold. You make a profit. The more the stock price drops, the more you make.

John Gantz is editor of the Tech Street Journal, an executive newsletter on high-tech stock market and business performance. The newsletter is published by Technology Financial Services, which is registered with the SEC. The opinions expressed herein are those of the writer, not necessarily of InfoWorld.

It's risky. You can never make more than 100% of your money — you have to pay commissions and pay back the stock, even if at only pennies a share — and the downside risk is nasty. Since there is no theoretical limit to how high a stock price may go, there's no theoretical limit on short sellers' potential losses.

For example: Let's say you went long with 100 shares of Computer Devices stock at its peak, \$16.62. What then cost you \$1,662 you could now sell for about \$50, which would just about cover commissions. Your loss — \$1,662. Someone who went short for 100 shares at the peak price of \$16.62 and sold now would have made about \$1,500 — \$1,662 minus commissions and the \$50 to repurchase the stock.

Conversely, if you hopped on the bandwagon late and invested \$1,622 in Fortune Systems to sell short at its low price of \$3.88, you have already lost about

***Now may not be
the time to sell
short. Too many
people are there.***

\$700. If the stock should climb to its previous high of \$419.75 before you repurchase, you're way out of your short position and out about \$6,800.

Selling short isn't for those who, like T.S. Eliot's J. Alfred Prufrock, measure out their lives with coffee spoons. It's for those with the gambler's humor and the ferret's watchfulness. Generally, less than 10% of the shares on the exchanges are sold short.

You might think that a large overhang in a stock's short sales is a reason to avoid buying it. After all, a lot of smart people have given thumbs down to it.

But sooner or later all those short sellers are going to have to pay back the borrowed stock. When they do, that will create demand, which should make the price go up, which should bring more short sellers out of the woodwork, which should cause the stock to go up further.

And over the years a high percentage of short sales to regular sales has been a bullish signal — when the bandwagon gets crowded, it's time to get off.

The common measure of short seller activity is the short interest ratio, obtained by dividing the number of shares in a stock sold short and not yet repurchased by the average daily volume of that stock for the month. Short-sales statistics for the market are computed as of the 15th of each month and are reported in the financial press shortly after that. Historically, a short interest ratio of 1.75 or higher is a bullish sign.

So yuppie. For the month that ended on March 8, 1984, short interest on the New York Stock Exchange (NYSE) was up 10% from the month before to 2.01; on the American Exchange (AMEX) it was up 16% to 1.91.

Short interest may be a better indicator of aggregate market momentum than individual stocks. In the middle of January, Coleco, for instance, was selling at about \$20, yet its short interest ratio was 8.9; by the middle of March it was selling at about \$13 and its short interest ratio had grown to 12.1. In the same period, IBM went in the other direction. Its short interest ratio dropped from 0.7 to 0.6 while its stock dropped from \$117 to \$112.

There's yet another way short sales are used as an indicator. A measure of the short-sale activity by specialists working on the exchange floors (who are particularly sophisticated traders) is a measure of what the most savvy investors think the market will do.

The indicator — special short sales to total short sales — runs counter to the short interest ratio. If the specialists stop selling short, it is because they expect the market to go up. It usually does. Any measure of specialist short sales to total short sales under 45% is considered bullish — for March it was 35% on the NYSE and 11% on the AMEX.

So what does all this arcane mean to you? First, that now may not be the time to sell short. Too many people are already there. Second, that a market upswing may be on the way. Third, now might be the time to buy.

But then, as Thomas Stearns himself pointed out, April can be a cruel month, with that insidious mixing of memory and desire. So don't count on anything.

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HITTING THE HIGH NOTES

Software for teaching music gives students new enthusiasm

BY MARGUERITE ZIENTARA

Senior Writer

Microcomputer software designed to teach music is making its first warblings on the Software Hit Parade. But a major question remains: Can you successfully bypass the teacher and learn music from computer software alone? Opinions are as diverse as the major and minor scales.

Leslie Miller spent ten years studying violin, viola and piano in the traditional manner. "It was such a chore, the teachers were so mean and kids ended up



being a nervous wreck," she recalls. On a recent weekend Miller settled down to spend a few hours with her Commodore 64 and Electronic Arts' Music Construction Set software. She was still playing Monday morning. "Once I got on it, I didn't want to get off," she explains.

Without her extensive musical background, however, Miller says she would have found the software somewhat less compelling and a lot more confusing. "Nothing beats having a human to talk to," says Miller, a computer operator at CW Communications in Framingham, Massachusetts. Nevertheless, after overcoming her initial cynicism, she says she enjoys working with the program's icons and its cut-and-paste function, and praises the beat counter and the scrolling staff offered with Music Construction Set. The variety of possible sounds available with the program also earns the program high marks from Miller.

Still, Miller marks the software down for a number of gaps in the program's

curriculum. "Whoever wrote this program was very brilliant, but he is aware of its limitations," she says. "He keeps suggesting that you go to the library to learn more about certain things."

The beauty of the technology is also its bane. "The program spends a lot of time teaching you how to use the computer," Miller says. "I think someone should know at least a little bit about either music or computers, or it's overwhelming just to sit down at this thing."

Students should have some previous training in music before they reach for music teaching software, according to some experts. Trying to learn music using computer software without prior musical training "would be like learning English grammar without knowing how to read the words," says Everett Hafner, adjunct professor of physics at Hampshire College in Amherst, Massachusetts. He teaches music using traditional methods and the ALF Music II software for the Apple II from ALF Products in Denver.

A few preliminary lessons teaching the relationship between musical notation and the keys on a keyboard are sufficient to get students started using the computer. "That's all they need. Then they work entirely alone and produce very nice work," Hafner says.

In the case of some musical skills, computer software is all you need, according to Fred Hofstetter, professor of music at the University of Delaware in Newark, and author of Atari's AtariMusic I and II software packages. "We've done studies with classes of students who knew nothing about music and we didn't allow any instructors to talk to them," he explains. "We made sure all the learning was done from the package and, in fact, it does teach."

Of course, the computer is better suited to some things than to others. It's well-suited for training by ear and for learning to identify the notes associated with chords, intervals and harmonies. But computers do have limits, Hofstetter warns. "I wouldn't recommend them for teaching performance practice, interpretation or creating music."

"The ear training is really beautiful," agrees Don Brill, one of the students who learned without human instruction. "It's a one-to-one situation with drill and practice until you reach proficiency. The computer

doesn't get tired of you like a teacher would." The computer also gives a uniform approach to learning, notes Steve Monarski, another student who learned ear training by computer, whereas "every teacher stresses different things."

Another major advantage of the technology is beneficial for composers who have difficulty hearing music in their heads. "Most computer systems, unless they're very elaborate, sound awful," Hafner says, "but the big advantage is that as you compose, you get immediate feedback on what you've done."

When selecting music software, buyers should be aware that software packages vary in sophistication. While drill-and-

VENDORS OFFERING MUSIC PRODUCTS

The following is a partial list of some of the major companies offering computer music products. Contact the manufacturer for a catalog of the products available.

Atari
1312 Crossman
Sunnyvale, CA 94086

ALF Products
1315 Nelsan Street, Unit F
Denver, CO 80214

Electronic Arts
2755 Campus Drive
San Mateo, CA 94403

Laubach Software
P.O. Box 1638
Tustin, CA 92680

Music Technology, Inc.
105 Fifth Avenue
Garden City Park, NY 11040

Passpart Designs, Inc.
625 Miramontes Street
Half Moon Bay, CA 94019

Sight and Sound International, Inc.
3200 South 166th Street
New Berlin, WI 53151

Shelton Leigh Palmer & Company
360 East 57th Street, Fifth floor
New York, NY 10022

Syntauri Corporation
1670 South Amphlett Blvd., Suite 116
San Mateo, CA 94402

Waveform Corporation
1912 Bonita Way
Berkeley, CA 94704

practice is common, there are also more advanced packages that incorporate elements of music theory. These packages are a bit harder on the pocketbook, however. The ALF Music II system, for example, comprises ten chips on a board and costs \$195.

"It [ALF Music II] knows music theory, so it knows where to draw the bar lines, how to make rests, how to tie notes — it knows everything," says Hafner. This allows students to work independently.

A commonly praised feature of learning music by computer is that you don't have anyone breathing down your neck, watching you, judging you and constantly correcting you. "It's easy to go at your own pace," Monarski says. "There's no deadline time and you probably learn it more thoroughly than you would if you just sat and listened to a lecture."

While Miller feels that it is nice to have a human around when you have a question, she also acknowledges that the lone learner is likely to be more daring and creative.

The biggest drawback of music software is the lack of depth in the feedback for the student, says Bill. "The computer

can tell you when you're right or wrong and in which direction, but it can't go into as much detail about your mistakes," he says.

Inferior sound quality is another major problem at this stage of the technology. "Computers are limited in terms of pitch accuracy and timbre or tone colors," says Gareth Loy, software coordinator for the computer audio research lab at the University of California at San Diego. Some of the sound problems are being overcome by the advent of small synthesizers, he notes.

"If you can afford a low-cost synthesizer, you can make the most of your home computer and use it at a much higher level than before. Synthesizers have much richer sound qualities than are available on native personal-computer hardware," he explains.

The real future of the technology, however, will be the ability to interface computers with actual electronic instruments, something that is just emerging as a reality. (See story below.)

"Software learning programs provide a rather powerful tool, very much like word-processing programs," says Russ Walter,

a Boston-based author and computer consultant. He believes that just as word processing encourages children's enthusiasm for learning to write, music software encourages experimentation and creativity in music.

"People will talk on the phone and draw all kinds of pictures, but they're very afraid to doodle on a piano," Walter says. "People are so uptight about being correct when it comes to music. But with the software programs, you have a sense of perfection. When you're finally done, after you edit out your mistakes, you have something that's perfect."

In spite of its shortcomings, music teaching software may be one of the last great bargains. Many software programs on the market today are "very beautiful and they're also inexpensive, at around \$30 or so," Walter points out. Most home packages are written for the Apple, Commodore, Atari and Radio Shack personal computers. In addition to offering drill and practice for learning notes, key signatures, rhythm and other essentials of the musical language, some music programs teach music composition. (See related story on page 24.)

BREAKTHROUGH PROMISES TO GIVE MUSICIANS TOTAL CONTROL

BY MARGUERITE ZIENTARA
Senior Writer

Personal-computer software for teaching and composing music is riding a fast and furious crescendo. Until recently, its rise has been held back by the inability to connect a personal computer directly to a musical instrument.

But last August, the International Midi Association (IMA) introduced a standard interface that allows virtually any microcomputer to control any electronic musical instrument. The Musical Instrument Digital Interface (Midi) is also eliminating the standards problem in the music industry by allowing interconnections between previously incompatible electronic instruments.

Software developers haven't quite caught up with the emerging market. But by June there should be an explosion of new products based on these developments, predicts Roger Clay, executive director of IMA, based in Sun Valley, California.

"Judging from the kind of response we've gotten from software developers and companies all over the world, I'd say the impact on the software industry could be considerable," Clay says. Among the companies that have expressed interest are Lotus Development, MicroPro, Microsoft, Adventure International and Broderbund Software.

There are also murmurings about interfaces being built into personal computers in the future. Some of the aggressive micro manufacturers are currently conferring with IMA on that possibility.

Where will it all lead? For musicians, it may lead to total control over the creative process. "An artist will be able to compose music, overdub, tweak and edit it and even connect with composers/performers, and then transmit the finished product via modem to a mastering facility in L.A. without ever having to leave his studio in Missoula, Montana," Clay says.

For teachers, communications software that will allow remote teaching is slated for release in June by Shelton Leigh Palmer & Company in New York City. Instructors will be able to communicate with pupils via modem, monitoring the students' development in such fundamental areas as keyboard technique, ear training and music theory, Clay says. Another teaching possibility is instructional systems based on interactive video disks, computers and synthesizers.

How can you get the interface? For users of the Apple II or IIe, Passport Designs in Half Moon Bay, California, offers a Midi interface card for \$199. The unit has been evaluated and approved by IMA. An interface card for the Sinclair, Commodore 64, VIC 20, Apple IIe and Zilog Z80A computers is available for \$149 from Music Technology in Garden City Park, New York. This unit has not yet been evaluated by IMA.

Once you have the computer and interface card, you must have a musical instrument equipped with the Midi interfacing box, now available on some keyboard and drum machines. The card connects directly to the box.

IMA is an independent, nonprofit organization that serves as a clearinghouse for information on the Midi. Its advisory board members include Timothy Leary, record producer Rupert Hine and musicians Herbie Hancock and Larry Fast.

With no advertising scheduled until next June, the six-month-old group has attracted more than 1,000 members just by word of mouth, Clay says. IMA members include manufacturers, users, educators and retailers in both the computer and music fields. Among the computer industry members are Apple, Atari, Mindset, Amiga and IBM.

The interface has caught on within the musical instrument industry "like wildfire," Clay says. "A year ago, two products had Midi on them; now it's about 50."

IMA can be contacted at 8426 Vine Valley Drive, Sun Valley, CA 91352.

WENDEL: THE AMAZING DRUM MACHINE

It's getting late, the recording session is running over and the drummer can't hit the beat close enough. He's just a fraction of a second off, but because of it, the sound isn't quite right. Well, there's only one thing to do—call Wendel, arguably the world's best drummer. Not only can Wendel hit with absolute precision, he can duplicate the sound produced by just about every drummer recording today.

The brainchild of Roger Nichols, a recording engineer who has won five Grammy Awards, Wendel is in reality a very sophisticated computer. But unlike many other computer-based "band boxes," Wendel isn't a synthesizer that manufactures its own sounds. Instead, Wendel captures the sounds produced by the best studio drummers and stores them for future use.

"We have each drummer run through his entire repertoire of strokes, repeating each several times," explains Nichols. "Then, if we need a repetitive pattern, Wendel can intermix the slightly different sounds of the needed stroke stored in its memory for the drum sound we want to use. The result is a sound with human-like qualities instead of the mechanical sameness of a synthesized drum."

Wendel's roots go back to 1978 when Nichols was working on Steely Dan's *Gaucho* album. Inherent in the music was a need for some very precise drum patterns. Although the best drummers in the business were tried, none was able to produce the combination of sound and feel the group envisioned. What was needed was a drummer with machine-like precision. But in those days, none of the drum machines currently on the market were available.

"I was sitting around the studio with the group one day," Nichols recalls, "when Donald Fagen, who was then with Steely Dan, suggested I build a machine that could play the drums the way we needed."

About a year and half before working on the *Gaucho* album, Nichols had turned to computer technology for help with the simulations and calculations for the design of a new microphone. "I bought all the books on computers I could find and learned how all the parts worked and how they went together. It wasn't easy. I still have a garage full of computers I put together that didn't work."

By the time Fagen suggested that Nichols build a drum machine, Nichols knew enough about computers to do it. The first machine he built was an 8-bit machine and was far less sophisticated than Wendel. But Nichols' computerized drummer worked well enough to do the job and was used in three of the numbers on the *Gaucho* album.

Wendel was conceived a year or so later when Fagen left Steely Dan and went out on his own. Nichols was called on to record Fagen's first album, *The Nightfly*, which also required the services of a computerized drummer. However, unlike the earlier Steely Dan album that used conventional analog-recording technology, Fagen's album was to be recorded using the new digital technology.

The biggest advantage of digital-recording technology over conventional analog technology is the improvement in the signal-to-noise ratio. The original drum machine was just too noisy for digital recording, so Nichols had to design a newer, quieter model to accommodate the new technology.

Since the music was going to be recorded in digital form, Nichols decided to build a fully-digital drummer that would produce the corresponding digital signal, or coding, rather than the drum sounds themselves. The easiest way to do that was to simply take the signal produced by the original drum machine's microprocessor before it was converted into an analog signal. The problem was that its 8-bit microprocessor just didn't

operate quickly enough to work with the digital recorder.

To be able to efficiently handle the required memory and provide the required 50,000 16-bit samples each second, a very fast CPU (central-processing unit) was needed. Nichols searched through the data sheets of every fast CPU he could find and talked to several microcomputer manufacturers in an attempt to find one that could provide the overall performance needed.

About that time, says Nichols, CompuPro, a Hayward, California, manufacturer of microcomputer components and systems, came out with its very fast 8086 CPU board. "On paper, it seemed to be everything I needed. So I bought it, along with their mainframe chassis, memory and support boards, put it all together and it met or exceeded the specifications printed in their data sheets." Nichols added a video display terminal (VDT) with retrographics to the CompuPro computer to produce the computerized drum machine now affectionately known as Wendel.

In practice, Nichols uses a studio tape recorder to capture a string of 15 to 20 drum beats. The tape is then played back and the one that sounds the way a perfect drum beat should sound is played into Wendel. The process may be repeated several times to provide Wendel with a selection of slightly different "perfect" drum and cymbal beats.

Because Wendel can only record for about ten seconds before its main memory is completely filled, the digitized signal is transferred to another recording media—an 8-inch floppy disk. Once the recorded signal has been transferred to a floppy disk, Wendel's main memory can be cleared and another ten-second burst of sound recorded.

After a recording session has been completed, Nichols can electronically edit the digitized sounds stored on the floppy disks to remove any extraneous noise that may have been picked up during the recording sessions. Once this process has been completed, the edited signal is transferred back to the floppy disk for storage until Wendel's services are needed at the recording session.

"We have floppy disks in the library that contain maybe 50 or 60 different drum hits, different intensities and different snare sounds," Nichols says. "We have the same collection of sounds for different kick drums, different high hats and other percussion instruments."

The VDT's graphic display is also used to determine where to loop a sound—a ride cymbal, for example. The idea is to pick points in time for each restrike that are slightly different so that the resulting sound is slightly different on each beat. In this way, Wendel avoids the machine-like precision that sets other electronic drummers apart from the human musician.

While Wendel can be programmed to follow a steady beat, it can also be used to replace the sound of a defective instrument (a broken snare, for example) exactly as it was originally played. To do this, the original recording is played into Wendel, which automatically prepares its own timing chart to identify the precise point in time when each drum hit was made by the studio musician. Then Wendel generates its beats in accordance with the timing chart.

Wendel was originally built to provide the absolute precision that human musicians were unable to provide. However, not all the beats in a number need to be hit with absolute precision. Because of this, Nichols programs Wendel to occasionally misplace a beat by a split second in noncritical parts of a number, further enhancing the human-like quality of its music. This makes it extremely difficult to tell by listening whether the drummer is Wendel or a human musician.

GRAPEVINE

KUG hooks up with CompuServe: KUG, a national Kaypro Users' Group, decided to go on-line with CompuServe's Special Interest Group (SIG) section when its own bulletin board became more than it could handle. Currently, members and other computer users can leave and grab messages about KUG on-line. A special forum for guest speakers has also been set up for all Kaypro users. Public-domain software and special KUG library programs are available for downloading. Any computer user with a modem and communication software can reach the KUG SIG on CompuServe by typing "GO PCS 25" at the prompt. Public-domain software for the Kaypro and CompuServe starter kits are available from KUG at Box 100, Malverne, NY 11565.

PCjr Users' Group: The Users' Group, a new club for IBM PCjr owners (anybody out there?), was recently born in Buddy Holly's hometown of Lubbock, Texas. Group president, Brian Gratz, says that "IBM has brought the personal computer into the home. The User's Group will help these users get the most out of their investment." The club will publish a monthly newsletter that features news, product announcements, reviews, user classifieds and a forum for the exchange of member-written software. It will also offer an Approved Product List of products that meet the club's standards. Items on the approved list will be available at group discounts for members.

"We want to keep our users on the leading edge of what's going on in the PCjr world," Gratz says. "No matter what IBM says, our users do want a second disk drive, more memory and an alternate keyboard. They want their machine to be able to function like PCjr's big brother, and we're helping them do it."

For membership information contact the group at 4620 50th Street, A-9, Lubbock, TX 79414; (806) 799-0327. A one-year membership costs \$15.

Apples and Kids: A colorful new publication geared to the young Apple user just published its first issue. *The Apple's Apprentice* is crammed with games, comics, technical help, news and reviews, all designed to keep kids interested and educated. The first editorial (written by the "apprentice wizard") says: "Not only

is it the first Apple magazine for kids, but it's the first magazine for kids where you can be boss."

Kids are encouraged to write and share their ideas, insights and needs with the publication, as well as to contribute articles, games and programs to the effort. The premiere issue features articles such as one on the computers that created the special effects in movies like *Star Wars*, *Star Trek* and *Caddyshack*.

For a one-year subscription, send \$24 to Emerald City Publishing, Inc., P.O. Box 582-AA, Santee, CA 92071.

FOG library goes on-line: Users of Kaypro, Morrow Micro Decision, Zorba, Executive and Lobo Max machines, as well as owners of the dear old Osborne 1 dinosaurs, can rest assured that they'll suffer no dearth of programs. The First Osborne Group (FOG) in Daly City, California, has put its entire public-domain library on-line.

System 1, for 300- and 1,200-baud modems, is on a 33 megabyte Trantor hard disk that holds the contents of 175 diskettes. It also includes, according to FOG executive director Gale P. Rhoades, "the new programs that people send in for submission to the library, and a lot of other stuff, too." The new submissions are in a special section. Its telephone number is (415) 755-2030.

There are two other FOG systems for CP/M users. System 2 runs out of Vancouver, British Columbia, and is 300 and 1,200 baud as well. It's on a 20-megabyte Trantor and has most of the public-domain library, though not all, according to Rhoades. Its number is (604) 596-0314.

System 3 is for 1,200-baud modems only. On a 10-megabyte Trantor, it contains the newest releases in the library plus other goodies. Its number is (415) 992-8542.

All systems have different access levels that depend on membership status. "The systems are open to everybody, but there's no CP/M access for a first-time caller," says Rhoades. "Initially, they'll have access only to the message system. To get CP/M access, they must leave a comment upon leaving the system and include their name, address, phone number and a FOG membership number if they have one." Rhoades says that varying

levels of access are allowed to FOG members, officers of affiliate groups and nonmembers. "It's all on the screen. If people read the messages as they get on the system and follow the instructions, they won't have any problems."

EVENTS

May 1, Palo Alto, CA: The Success in Software conference will bring together such industry leaders as Mitch Kapor, president of Lotus Development, Bill Budge, president of BudgeCo, and John Rowley, president of Digital Research. They and other prominent speakers will discuss the major issues in microcomputer software. Contact: Creative Think, (415) 321-6775. Location: Hyatt Richeys Hotel. Time: 8:15 A.M. - 5:00 P.M. Registration will begin at 7:00 A.M. Admission: \$295 before April 3, \$345 after.

May 3-6, Chicago, IL: The former Appfest and PC'83 shows have been merged into one event called The Personal Computer Userfest. This new show will include IBMs, Apples and their work-alikes such as Digital Equipment machines. Contact: Northeast Expositions, (617) 739-2000 or (800) 841-7000 outside Massachusetts. Location: O'Hare Exposition Center. Time: 10:00 A.M. - 5:00 P.M. Admission: \$10.00 one-day ticket, \$20.00 all four days.

May 5-6, Oakland, CA: Buy, sell or trade at The North-West Computer Swap No. 5. Exhibits range from IC's to complete computer systems. Contact: North-West Computer Swap, (408) 266-6768 or (408) 978-8626. Location: Oakland Convention Center. Time: 10:00 A.M. - 5:00 P.M. Admission: \$6 for both days.

*Jackie Rae, applications editor
Barbara Gerk, researcher*

InfoWorld welcomes contributions from the microcomputer community to Grapevine. If you have information on inexpensive resources for users, special events, new bulletin boards or user groups, address it to the Applications Editor, InfoWorld, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025.

Doug Clapp

THE DEMISE OF THE USER



The West Coast Computer Faire was like going to bed with your mother. The air was acrid with incest. Everybody was us. Industry people. Blue suits. Neckties. Socks. Well, not completely. There was one "computer user" who tried to sneak in the back and wander around. Foolish naïveté — not surprising in a user. Fortunately he was quickly spotted (you couldn't miss him) and brutally clubbed to death beside Digital's display (it was only fitting). The kid didn't have a chance. Four venture capitalists, a literary agent, six marketing guys and the head of some big chain caught the kid. They threw control keys in his eyes, tripped him on an obscure license agreement, then went at him with massive documentation in rigid, slipcover binders. You know the kind; sledgehammers couldn't have done it better.

It was the end of an era, and it passed without notice; the user's piteous wails were lost in the roar of agents making lunch dates with developers and authors. So it goes. Just as well, I say.

Okay, I admit that users were a romantic notion, like paddle-wheel boats, clean air, Democrats and companies with ten people on the payroll. It's nostalgic to imagine people using computers in the "real world." It's amusing to pretend that everyone doesn't know Pascal like the back of their teeth. It's quaint to think someone still can't strip off the high bits or doesn't know enough to throw in a couple of blank fields (just to be safe). But who needs them? Like the dodo bird, users were a funny but ultimately stupid idea. Cute, but not built to survive. A transitory

The computer industry's most engaging and rakish personality, Doug Clapp, lives at 620 Stuart Avenue, Crookston, MN 56716, where he sits around all day in his pajamas and writes stuff, including this bio.

phenomenon. Not in, you know, The Plan.

But let's not over romanticize their passing. They were, after all, more trouble than they were worth. First, they never had any money. Can you imagine traveling to San Francisco and not writing it off? Even if they did somehow arrive at the Bay, they couldn't afford the Mark Hopkins or the Hilton. And they wouldn't know *anybody*. Why mention the fun you've had with (Big Industry Name) if your friends don't even know the guy? Jeep! How tacky.

(Look: Microsoft packed the Flood mansion without needing to invite even one person remotely ordinary, and the message was clear: if you don't know your pâtés and champagnes, we don't need ya.

And Bill Gates says: "Oh yeah, you're the guy that rips everybody up." No, no, no. That's the *other* guy.)

The world turns, thank God. We couldn't have Jordache jeans and rhine-

Microsoft packed the Flood mansion without inviting an ordinary person.

stone roach holders until we got rid of hippies. We couldn't have the federal government until we got rid of Jacksonian democracy. We couldn't have American Express cards until we got rid of the "my-word-is-my-bond" crap. We couldn't have all the great micro-to-mainframe stuff until we got rid of the low-lives without mainframes. We couldn't have 70-megabyte hard disks until everyone was "in the industry." Do you know what those things cost?

So the era passed, without notice. If you're not perceptive, you can miss this sort of thing. It's understandable.

There were a few (just a few) misguided, doomed-to-failure vendors at the faire who are still living in the past. The Borland International folks, for example, believe they can sell an incredibly superb, world-class Turbo Pascal for some 40 odd bucks. I mean, how can developers justify \$700

for their products if they use a \$40 compiler? After all, *people* don't buy these things, *companies* do. What's an R&D budget for if not for buying overpriced programming tools?

Let's remember the users for what they really were: a bunch of crassly over-eager youngsters full of stupid questions, dumb ideas and ridiculous notions. Notions like "Wouldn't it be great for recipes," and "I wonder if I can make it play tic-tac-toe," and "This would be great for the kids," and "Let's make it work with a color TV," and "Do you think they'll ever get really cheap?" and "This could wipe out the power structure" and "Could I use the cassette recorder I already have?" How embarrassing. Just the thought of BIORHYTHM.BAS makes one shudder at the gaudiness of it all.

Oh, I'm sure stories about users will persist for some time. Rumors that someone in Kansas isn't working for some software-hardware-marketing-publishing-telecommunications firm. This is *Chariots of the Gods* stuff, Factoids. Graduated build-downs. Talking dolphins. Believe what you will. It's just another silly belief structure. "What landed in your backyard?"

Actually, the question of whether users actually exist is a moot point. The wealthy Victorians could hop a carriage to London and never see a person in rags. If pressed, they'd no doubt mull the question over, furl their brows, then reply, "Well... I suppose they exist, but..." The only proper reply to an outrageously tasteless question. And you'd never be invited back. (My brother told me about a nude beach in Jamaica where the women do, of course, wear their jewelry. One does what one must, I suppose.) We might as well argue about Lincoln's ghost over there in the corner. The user question, these days, is best handled by philosophy majors.

I watched them drag the bloody corpse away; wrestling the body through the crowds, trying not to stain the pinstripes in passing. I was a witness to history. He was wearing a T-shirt and jeans, of all things! I glanced down at the distorted, beaten features. For a moment, I thought I recognized someone I knew a long, long time ago. Then the body was swallowed by the crowd and the moment passed. Just as well.

See ya at Comdex.

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PHOTOGRAPHERS CONFER ON-LINE

Networks link globe-trotting free-lancers to publishers, agencies

BY DENISE CARUSO
Reporter

The hardest obstacle to overcome for anyone who decides to go solo in a profession is making connections.

Free-lance photographers are a good example. They've been forever plagued by the difficulties of connecting with the people who buy their photographs, especially while traversing the jungles of deepest Africa or other exotic locations. And photo buyers have been equally bedeviled by the difficulties of locating absentee photographers. But the picture is changing — thanks to the development of photo-service networks.

Networks for stock photo agencies, photographers, publishers, advertisers and just about anyone who needs to tap into the photo fraternity were nonexistent until about a year ago, when two international networks went on-line. Only one, the New York City-based Photonet, really services all the nooks and crannies of the profession, providing everything from the standbys such as electronic mail to computer-generated slides and on-line shopping for photographic equipment. Photonet links photographers of all specialties to all segments of the industry, including photo agencies, researchers, editors, art directors, audiovisual and film producers, and manufacturers and retailers of photographic equipment.

The other network, Photo-1, still calls itself "experimental" and limits itself to stock agencies, publications and cream-of-the-crop, globe-trotting photojournalists. Both networks are open only to professionals. And, as many professionals are now attesting, the need for such services is great.

Photonet, which bills itself as an information utility for the entire professional-photography industry, has been on-line just eight months and has already amassed nearly 400 subscribers. Services offered on the network include bulletin boards and electronic mail, news and information resources, a subscriber directory, on-line shopping and special interest group (SIG) services to organizations that request them.

It was founded by computer neophytes Len Kaltman and Patricia Woodson, two New York photographers who met at a Radio Shack seminar early in 1983. They

worked out the idea after Kaltman discovered CompuServe.

"I got very excited about that," he says. "I looked around and saw nothing to do with photography in the computer world, nothing on a professional level, nothing for photographic research. Pat and I met and put our brains together, got a programmer and started programming."

They finished the concept, designed the network and announced it at a press conference in April 1983. One hundred-fifty enthusiastic people signed up before the network officially went on-line in September.

All subscribers must have professional credentials — Photonet screens all its applicants. Once the proper credentials have been established, all a user needs is a computer with a modem, the ability to speak English and no more technical aptitude than it takes to "use an automatic bank teller machine to punch in numbers," according to Woodson.

"Maybe we're not so different from other industries," says Kaltman, "but a lot of the reasoning behind creating things like services for photo-equipment manufacturers and electronic communications comes from the fact that we're usually isolated about sharing information. In working with clients, photographers have always had terrific problems, especially when they go out on location."

"And photographers need to utilize a lot of services and channel information rapidly. With Photonet, you have an automatic tie-in with Nikon for repair information and other services. You can let people know on-line that you need technical information, or to borrow some equipment. You can continue to work with a publisher or a stock agent to let them know where you're going, so you can produce useful film for a client."

Among their prestigious clients is the National Geographic Society, which uses the service to find the vast number of photographers and photographs it needs for its special publications and educational media division. Another client is the world-



renowned photography school at the Rochester Institute of Technology in central New York, which recently offered to provide Photonet subscribers with a "living data base," composed of the school's 60 professors, to answer technical questions.

William Allen, assistant director of National Geographic's special publications and educational media division, went on-line with Photonet about two months ago. His need for good photos is vast: in the first six months of 1982, his division used 3,563 photos in its many publications. Of those, 747 were unassigned pictures taken from agencies or photographers' stock files, all of whom had to be individually contacted.

Allen says that up to now, he devoted too many hours and dollars to mailing out form letters, thus when Photonet gets its electronic form letter service up, it "will enable us to send numbers of letters quickly. The reduction in cost will be great; it costs so much to get letters done now. I think it will enable us to reach a lot of photographers we couldn't ordinarily reach, some of whom could be significant contributors."

Woodson says they're working on setting up electronic facilities for mass mailings in the near future, a need Photonet hadn't anticipated the demand for at its inception. "We didn't want people inundated with junk mail," Woodson explains. "But since people need



ANU PURCELL

Carl Purcell is one of the professional photographers who use Photonet's services.

to send more copies, we'll be doing that soon."

The junk-mail issue is also of concern to Photo-1. Cofounder Rick Smolen cites the danger of junk mailings as one of the reasons he raised the subscription price from \$100 to \$150 per year — to keep the membership limited to professionals.

"Once a load of junk mail goes to the editor of *Time* two or three times, for example, no one will want to touch the system anymore," he stresses.

Founded by Smolen and fellow photojournalist Dave Cohen, Photo-1 is primarily an electronic-mail and bulletin-board service for its 100 subscribers. It sprung from the need for photographers to communicate with each other, especially while on the road.

"Out there, your family is other photographers and other journalists," Smolen explains. "You hear all kinds of good information during dinners in weird countries in the middle of the night. One time I realized when I came back from an assignment in Thailand that I knew a taxi driver who spoke English, and the best hotel and the name of the U.S. Ambassador there. That kind of information would save another photographer a week on the phone in a new country."

Even with such high-visibility subscribers as *Time* and the National Geographic Society, Smolen says he's trying to keep Photo-1's profile low. "Our main appeal is to people who are already doing business with each other." To emphasize that, Smolen says, potential subscribers are now required to have recommendations from two other Photo-1 users before they can join the network.

The travails of travel is something that both networks sympathize with. Both Photo-1 and Photonet provide stock agencies and publishers like Allen with the ability to keep an eye open for worldwide photo possibilities. Photonet uses a bulletin board called Travel Update. "It's a kind of self-made data base by photographers

who want people to know where they're going," says Kaltman. "I can scan a data base to find out who's going where at what time and commission them for photos if I need to do so."

A separate bulletin board, the Stock Update, provides photographers with another place to list their work. Picture buyers can peruse the board to find who has just returned from somewhere in order to update their stock collection.

Another Photonet bulletin board makes it easy for anyone needing photos of a particular subject to put out a notice to stock agencies and photographers for submissions.

Photonet also makes room on the network for various SIGs. Members of restricted professional groups receive a special log-on number from Photonet that gives them immediate access to their organization's internal bulletin board. The Picture Agency Council of America (PACA), a group of 80 of the largest picture agencies in the world, accesses a private area within the network to conduct its business. Kaltman says the SIG is being used "very enthusiastically."

Another SIG, this one open to all network users, is the Chicago branch of the Advertising Photographers of America (AAPA).

Although most people are intrigued by the possibilities of a far-reaching photo network like Photonet, others are abstaining from judgment until the system is fully developed.

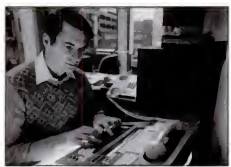
"So far it's marginal as to its value," says Erwin Perton, of Fred Lewis Incorporated in New York City, a stock agency with a million-photo library. But he admits that of the 50 stock agencies in New York City, about half subscribe to Photonet. "It has promise, but they'll have to sign up more customers before it's worth it. At the moment there isn't any competitive advantage. But one day when [more] customers are on it, we may see requests that wouldn't come in over the transom or

over the telephone," he says.

Another stock agency voicing concern over the potential impact of networks like Photonet is The Photo File in San Francisco. Gerald French of The Photo File says that although he is seriously considering signing up for the network, he hesitates because, "One, it's an unknown. And two, I don't know how I can utilize it to make a profit." An area of concern for stock companies, he says, is that photographers on-line can deal directly with clients rather than going through agencies. "If we charge \$500 for a photograph, the photographer gets \$250," he says. "If he [the photographer] sees the request, there's no reason for him not to respond directly to the publication, and publications prefer to deal directly with photographers."

But National Geographic's Allen doesn't see this as a problem. "No, we certainly wouldn't be using stock houses less. What we'll do is simply expand the number of contacts we have. Many of our small-scale projects, on a short fuse, aren't worth the agency's effort, the photographer's effort or our effort to send out a mass search. Photo agencies have a great advantage in that particular way. We tend to deal with them a great deal on shorter projects. We won't be slowing down at all."

It is true, however, that free-lance professionals stand to greatly benefit from



Bill Allen of the National Geographic Society

photo networks. Free-lance photojournalist Carl Purcell, whose photos have appeared in *National Geographic*, as well as many other publications (he also writes a regular column for *Popular Photography*), claims Photonet already has become "indispensable" to him.

"Of course I'll sell direct to a client instead of to a stock house," says Purcell, who has traveled to all corners of the world. The day we spoke to him, he was in the midst of about four hours of Photonet work, including a reply to a researcher looking for pictures of African families and of power plants in India.

"I'll sell to whoever comes to me for pictures," he says. "For example, *National Geographic* has requests on-line and I'm responding to them today. It saves

COMMUNIQUE

the commission. They pay a straight rate, and they'd rather pay the photographer the rate. But I don't think it's a big drawback. Not that many publications go directly on-line with photo requests." Purcell says Photonet means "literally thousands of dollars to me, to be able to find out what people are looking for."

A new feature of Photonet may soon save others thousands of dollars as well, especially professionals who need quick solutions to problems only an expert can solve. This feature, dubbed by the Rochester Institute of Technology (RIT) as the "living data base," has founders Woodsen and RIT-graduate Kaltman "delighted."

Russ Krauss, director of the school of photographic arts and sciences at RIT, sold the data-base idea to Kaltman and Woodsen as "an exciting marriage between imagery and computers."

The "living data base" will be composed of a number of terminals installed in RIT's school of photography. All the major departments — including imaging and photographic science, photographic technology (including biomedical photography), film and video, fine art and alternative photography — will be represented.

"People who access Photonet will be able to literally branch off to an RIT network and raise whatever questions they have, which will then be routed to the faculty members with expertise in that field." Krauss says RIT has 60 professors, and is the largest school of its kind. He also says they will not charge for the advisory service unless the question is very complex and requires in-depth consulting time. Except for the complicated queries, Krauss estimates that turnaround time won't exceed a day.

Why such altruism? "Synergism between Photonet and ourselves is mutually beneficial. We're looking at the future and seeing where education is going in photo arts and sciences," he says. "I'm trying to alert the faculty to the virtues of computers and networking. It's not only a service to the field, but it's a step to professionally update our faculty."

In the future, RIT may participate in some form of electronic publishing and other services as well. In the meantime, Krauss says, "We'll start off small, provide quality service, and see where we go. We've always been known for quality, and we want to maintain that."

Photo-1 is the more expensive of the two networks, costing \$150 for a one-year subscription, although the on-line connect time is billed at \$17.50 per hour compared to Photonet's \$24 per hour. Photonet charges a one-time subscriber fee of \$49, and charges a one-hour minimum per month. Both systems run on any computer with a modem.

Keep up to date between flights: Next time you're twiddling your thumbs in an airport lobby, look around for a BIS Business Center to help while away the time. BIS Communications of Scottsdale, Arizona, recently opened its newest Business Center at the Atlanta Hartsfield International Airport.

The center uses Digital Equipment's personal computers to access CompuServe's Executive Information Service. The service, also operating at La Guardia Airport in New York City, offers a variety of stock and financial information, electronic conferencing, AP news reports, weather reports, updated airline schedules and fare information. Travelers with a membership in CompuServe can also use the service for electronic mail. If you're short of cash, you can use the automated Universal Money Centers' check-cashing machines.

From walkie-talkies to QuoTreds: No, Trekkies, QuoTreds will not beam you up, but the hand-held, cordless units do give displays on a liquid-crystal screen. Developed by Dataspeed, a San Mateo, California, telecommunications firm, this device lets investors call up the latest trading and pricing information on major stock and commodity exchanges.

The computer-based system combines satellite communication with local FM

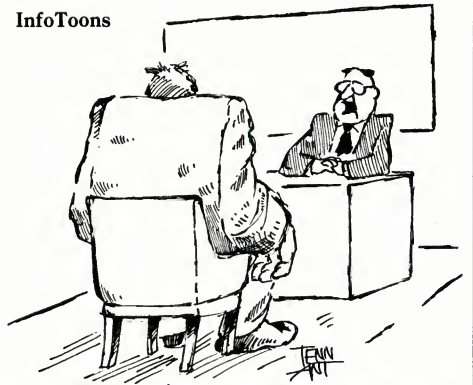
radio transmissions so that instant quotes are accessible anywhere within a 30-50 mile radius of the station's transmitter. Transmitters currently operate in Los Angeles, San Francisco, Chicago and New York City.

The QuoTrek unit costs \$349, with subscription fees varying according to the type and number of stock exchanges to which you desire access. You pay a fixed monthly rate of \$30 for the service plus additional fees for each exchange. To get your own "walking stock market" report, call Dataspeed at (800) SMARKET.

3Com cuts prices and adds value: 3Com, of Mountain View, California, has reduced the price of EtherLink from \$950 to \$795 and enhanced two other EtherSeries products. EtherLink is a combination of an Ethernet interface and user software for personal computers. The EtherShare software, priced at \$595, can now support the use of a single IBM PC as both a network server and workstation rather than forcing you to dedicate the machine solely as a server. With the new \$100 EtherStart chip, an IBM PC no longer needs local disk drives and controllers to function on the network. Now, according to 3Com's sales and marketing vice-president Chuck Kempton, companies with as few as two personal computers can enjoy the benefits of high-performance networking.

Barbara Gerck, researcher

InfoToons



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EASE OF USE TAKES HOLD

Publishers adopt Software Publishing's pioneering approach

BY JIM BARTIMO

Senior Writer

It's 8:50 A.M. on a Monday morning and Fred Gibbons sounds angry. The new product in Software Publishing's PFS: line of software won't be ready as planned for release at the Comdex Spring '84 trade show. "This is how companies get burned," the company president shouts to one of his people in an irritated tone. "You can't announce a product and then not deliver it for months. That's why we're going to delay the announcement."

The product is PFS:Plan, a new type of spreadsheet with the ease of use and simplified menu choices that have put four of Software Publishing's packages in the top ten of almost every list of best-selling software. It makes Gibbons angry to think that Software Publishing might announce PFS:Plan too early. "It happens to every company at some point — you make a mistake."

Gibbons and his company have thus far avoided making such serious business mistakes by sticking to a strategy established early in the company's history: the "principle of least astonishment." Adherence to that principle is in large part responsible not only for the financial success of Software Publishing, but also for the development of a family of products that has spawned widespread efforts to make software easy to use.

Software Publishing has managed to create four best-selling packages using a different formula than most other companies, a formula that was novel when it was ushered onto the market. Included in that formula was the idea that software does not need to be complicated to be useful, and that such software could be sold cheaply in modular form.

PFS:File was the company's first product. It was introduced in 1980 with a surprisingly low price tag — for its day. File's small menu gave users limited function choices. At the same time, it reduced the buyer's anxiety because of having too many choices and too many functions. The Personal Filing System (PFS) is a file manager that gave the company a permanent prefix for the products that would follow.

PFS:Report followed in 1981. PFS:Graph in 1982 and PFS:Write was announced in 1983. All three of the these products feature a simple menu with fewer than ten options. Moreover, files could be exchanged from one package to the next to create the precursor to integrated software such as Lotus 1-2-3. In addition to working with its own files, PFS: software can also load and manipulate VisiCalc files.

"Everything on our products is done on forms. I like forms because people are used to dealing with them," says Software Publishing vice-president of software de-

Newsweek, he seems less enthusiastic when he talks about the machine in person. Gibbons calls pull-down menus "just rich function keys." Page seems even less impressed.

"My feeling is that the success of all this mouse and window stuff lies with the Macintosh, because it's been rejected by the market so far with the Xerox Star and Apple Lisa," Page says. "There's a vacuum now for what is the easiest [interface] to use."

With two strong thinkers directing such a successful foray into the market, it was inevitable that others would adopt a

search for easy-to-use software with an easy-to-use user interface. In the search for the ideal user interface, several major efforts have been made by developers to create products that let the computer meet the user halfway.

"In the past, the user interface has been in the user's memory," says Chris Rutkowski, president of Rising Star Industries and creator of the Valdocs operating system for the 8-bit Epson QX-10. Though Valdocs is now considered somewhat of a failure (an upgrade to better the effort is due out soon), the operating system was transparent and it allowed users to store, print and draw graphs with the push of a button.

"People weren't thinking about the user interface then. They were building solutions at random without talking to the user," Rutkowski says. Operating systems such as Unix and MS-DOS, he points out, are the product of a small group of unusual people — programmers. "Programmers manipulate symbols — they enjoy it — so they were given an interface that does just that. For them, machines were user friendly."

But other users are not as expert at manipulating the symbols necessary to use CP/M or IBM's PC-DOS. Humans are best at recognizing patterns such as words and images. Humans can easily recognize thousands of different type styles and signatures as comprised of the same alphabet, a feat of recognition not possible for even the most sophisticated computers. A computer is best at manipulating symbols. "Wouldn't it be perfect if we could put the two together?" Rutkowski



Fred Gibbons, president of Software Publishing

velopment, John Page, who designed the company's original products. "I wanted to emulate real forms — they give the user more flexibility."

"I thought that everyone needed software that wasn't out of this world in price," Page says. "I aimed the software at the guy sitting next to me on the plane who says 'Oh you're in computers, I don't know anything about them.'"

Menus are the foundation of the PFS: line. Its bare-bones simplicity has helped the line to outsell products with more complicated and expensive user interfaces such as windows, mice and pull-down menus. Though Software Publishing has fully endorsed Apple's Macintosh, many employees seem less impressed with its new user interfaces than they are with those of their own company.

Despite glowing recommendations of the Macintosh given by Gibbons in Apple's pull-out advertisements in *Time* and



The three people who founded Software Publishing in 1980 — Janelle Bedke, Fred Gibbons, John Page

asks. "The user interface goes in the middle."

Office automation experts have long been struggling with the concept of the user interface, since unwilling office workers often had computer technology thrust upon them. "I think that a bad interface hurts you a lot and a good interface only helps you a little," says Michael Hammer, office-automation expert and president of Hammer and Company.

According to Hammer, consistency is an important aspect of the user interface. "The user should be able to use the same principle to accomplish the same end," he says.

Other industry experts have more exotic ideas about the ideal interface. "I can see games like Zork and Adventure used as a way of letting the user explore the [computer] environment," says William Zachmann, director of research for International Data of Framingham, Massachusetts. "But basically, you need something that allows a relatively naive user to find his way through a sophisticated desktop machine."

No matter how sophisticated the user interface is, the functions of the software are still the paramount concern to the user. "It's not the more functions the

better — its the right functions," says Hammer. "Functionality is the beef and the user interface is the bun. If the bun is no good, the beef falls out."

"The Lisa had a lovely interface, but not the right functions. So, it's not doing well."

The Lisa's interface is extremely slow. Time is an important factor in keeping the user involved. The ideal response time after a key is pressed is one-tenth of a second, according to Scott McGregor, manager of the interactive systems group at Microsoft. After one second, the user looks away from the screen and starts to look out the window or thinks about having a snack. At thirty seconds, the user gets out of his chair. "You have to be aware of these thresholds and stay below them," McGregor says.

Despite its age, McGregor holds Software Publishing's user interface in high regard. "The PFS: people have said, 'We'll give you fewer functions, but we'll make it easy to use.' Their menu choices are extremely powerful," he says.

PFS: menus also meet Hammer's criteria for consistency. A basic menu with a few powerful functions appears on the screen for every product and choices that result from using the main menu seldom

require more than a yes or no.

But beyond ease of use, PFS: products seem to zero in on the most needed functions. "Adding functions is as easy as shooting fish in a barrel," Page says. "The important thing is to choose the correct functions."

Software Publishing doesn't always hit its mark here. In fact, the one complaint by PFS: users is that some functions are not included in more complicated products. For example, in an effort to make the company's newest product, PFS:Access (a communications package) easy to use, the automatic redial function was omitted — a function available even on the easy-to-use public-domain package PC-Talk.

PFS:Write, the firm's word-processing package and a market success, also suffers from some limits in the name of ease of use. A second package, PFS:Proof, was recently added to the product line to boost Write with a 100,000-word dictionary.

Another problem for Software Publishing is its image as a producer of products for only the first-time user. Because its products are almost always sold for less than \$150 and need less memory than more sophisticated packages, many think that PFS: software is not for the serious user. One reason may be that Software

Publishing has never released a spreadsheet like VisiCalc or an integrated package like Lotus 1-2-3. But many owners counter those claims.

"That's insane," says one faithful PFS: user, Terry Janicek, director of operations research at Chicago Magnet Wire. "To say that PFS: software is not geared to serious business is wrong. We use the packages for sales and scientific analysis. The business applications are limited only by the users' imagination."



Page, Gibbons and Bedke display three Software Publishing products.

PFS:Plan will fill the spreadsheet niche, but it is unlikely that the PFS: line will ever contain an integrated package. Since most PFS: packages work together, Gibbons believes that users can build an integrated system at their own speed. He likens integrated packages to home entertainment units that include a television, stereo and radio.

"We believe that you get better performance out of each component if you buy them individually," he says.

Chris Yalonis, director of Creative Strategies International, a consulting firm in San Jose, California, believes that Software Publishing has succeeded in its marketing effort and product-identification scheme. But "their weakness is that although they have a large installed base, their revenues haven't been as large as some of their competitors," he says. "For every package sold, probably only \$70 is coming back to the company and it costs the same to market a \$500 product as it does to market a \$125 product."

Software Publishing's vice-president of marketing, Janelle Bedke, believes that it's precisely the low product price that allows the PFS: line to advance so surely up the best-seller list. "The financial community likes to see the steady growth of an entire product line, not just one product," she says.

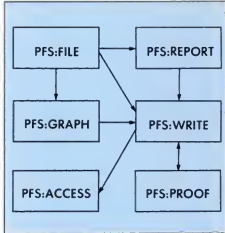
"The financial community views the personal-software industry as a slew of one-product companies," says Sy Kaufman, a partner at the investment-banking and venture-capital firm of Robertson, Coleman and Stephens in San Francisco. "Unfortunately, we don't have any money in Software Publishing."

Kaufman sees the PFS: pricing strategy as "brilliant." He points out that the PFS: line offers more for the money per productivity tool than even the integrated packages. "Lotus 1-2-3 charges \$165 per productivity tool (such as word processing or spreadsheet) and Symphony is about \$145 per tool. These prices will continue to move south."

PFS:Plan may be the first Software Publishing product to break the \$150 mark. "IBM users tend to buy software like they buy wine, they go by price," Page explains. "There's an assumption that if it's cheap, it's no good."

PFS:Plan will be available to customers by early summer. "People who are used to the old type of spreadsheet may find ours difficult to use at first," Gibbons explains. "But you can do just as much with ours, and if you've never used one before, ours is much easier to learn."

In addition to the PFS: line, Software Publishing has a secondary product line called PFS:Solutions, with features such as home budget, mailing list, stock portfolio and inventory applications. A third line of



This chart shows which Software Publishing products work together.

Just how did all of this software get its start? Gibbons had worked at Hewlett-Packard as product manager for the HP-3000 minicomputer; Page had worked there for 12 years and Bedke for ten. Gibbons arranged a royalty agreement with data-base expert Page for PFS:File in 1979 and Bedke was hired to handle marketing some months later. Even though PFS:File was released in 1980, Gibbons didn't assume the role of full-time president until January of 1981. Page took on the role of engineering manager one month later.

Gibbons claims that Software Publishing could be a \$100 million company



This example of a Software Publishing menu is from the PFS:Access communications package.

software products was recently announced by Software Publishing called Power Up: — a direct-marketing catalog of low-cost software packages developed both within and outside of Software Publishing. Eventually, Software Publishing will add a higher-priced line of software.

within five years. Pioneering ease of use has certainly been lucrative — the firm will definitely realize \$25 million in revenues by the end of this year.

But with all this success, Gibbons is still irritated that PFS:Plan was almost announced ahead of schedule.

Tool may provide users with a natural-language interface

BY PEGGY WATT
Reporter

Texas Instruments plans to market a programmer's tool that is based on the firm's natural-language approach.

The framework for the natural-language interface was first released by the company in its NaturalLink communications package, which allows users to connect to the Dow Jones News/Retrieval Service. The programmer's tool, called the NaturalLink Technology Package, uses the same artificial-intelligence concepts to let programmers develop and manufacture products that use the natural language (English in this case) of a built-in dictionary instead of cryptic computer commands or icons representing commands.

Products developed with the package would permit an individual to ask questions or issue commands by constructing a sentence from sentence segments that are displayed in different windows. The programs will alter the choice of windows or fragments available to the user on the basis of the "grammar" of the partial sentence as it is entered.

The Technology Package uses lists of verbs or nouns that sometimes continue past the window visible on the screen, thereby requiring scrolling. A few pop-up windows — including a help message —

appear only when needed.

Built-in safeguards prevent the user from building sentences that are inconsistent with grammar rules — two verbs can't go together. A mouse can be used to select sentence parts. TI's NaturalLink designers passed by the use of icons in favor of lists of words or phrases that

the University of Alabama at Birmingham obtained the programming tool about three months ago for testing. University system manager Steve Wixson says NaturalLink will act as a natural-language interface to help physicians who are not trained on computers obtain data and view multidimensional images of the heart.

Though he is not a linguist, Wixson wrote the grammar for the cardiology center's application. The process involved writing and classifying the program's vocabulary, setting up the sentence structures with which users build inquiries,

Products developed with the package would permit an individual to issue commands by constructing a sentence.

reinforce the availability of natural language.

TI itself plans to build new software packages from NaturalLink's framework and expects to announce several specific applications this year. The company is willing to train developers who purchase the \$8,000 package, and will collect royalties from any products that those developers create with it.

TI reports that a number of software developers have expressed interest in using NaturalLink as the base for designing specific products such as educational and business-office software, as well as for communicating with on-line data bases. The clinical cardiology computer center of

designing the screen and writing and debugging an application program.

The NaturalLink designers claim that programs that use the natural-language system will be easy to learn. The system allows programs to be written in almost any language. For instance, a TI technician is using the Technology Package to design a program that will teach Korean to her daughter.

NEW PROGRAMS

Utility software for error-free data transfer: ACOM (Asynchronous Communication) is Diversified Data Resources' entry into the file-transfer-software market. Any personal computer with an asynchronous port can use ACOM without added software. According to Diversified Data, the menu-driven software cannot lose data during transmission due to a pulled plug or jarred modem.

ACOM supports line speeds of up to 9,600 bits per second, odd or even parity, one or two start/stop bits and 8-bit data characters. A supplied parameter file sets line parameters, but owners can override the file by supplying parameters independently.

Three versions are available: ACOM, a terminal emulator with no file transfer, which allows an IBM PC XT to emulate IBM 3277, 3278 or 3279 communications when connected to a protocol converter; ACOMFT, which allows a PC XT to transmit files to another PC XT; and ACOMHFT, the mainframe software that enables ACOMFT to transmit files to or receive files from an IBM or compatible host mainframe. The prices for ACOM,

COMMANDS:		Find	Find the	Find all
FEATURES: birthdate date filled date hired date received description employee number hours job date length in inches name operation	CONNECTORS: and of or the average the maximum the minimum NOUNS: jobcard operation order piece work	QUALIFIERS: that are listed on that have that list that request that were performed on that were requested for that were turned in for who have	COMPARISONS: between >= < > <= ATTRIBUTES: (specific jobcard job dates)	
Enter jobcard job date : march 1982				
Find all operations whose operation operation number is between 100 and 300 and that are listed on jobcards whose jobcard job date is				
F5-Help F8-Rubout F9-Restart RET-Select ENT-Proceed				

The NaturalLink Technology Package lets you build commands from sentence fragments.

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SOFTWARE

ACOMFT and ACOMHFT are \$120, \$240 and \$3,000 respectively.

Diversified Data Resources, Inc., 25 Mitchell Blvd., Suite 7, San Rafael, CA 94903; (415) 499-8870.

Talking software for blind IBM PC users: Business-software publisher Solutions by Example has released a new version of PC Speak, the software that operates with a text-to-speech synthesizer to aid blind computer users. The software and voice synthesizer effectively replace the monitor as the mechanism by which the program communicates.

PC Speak speaks aloud the material that is sent to the display. Alternatively, you can use it to review what has already been placed on the display. You can select words or lines that you want the program to spell or pronounce with the cursor-control keys.

You can enter specialized pronunciations for punctuation marks and symbols — in a spreadsheet, for example, you can refer to a decimal point as "point," and in word processing, the same character is a "period."

You can also use PC Speak and the voice synthesizer with a modem and terminal-emulation software for timesharing. Software such as Lotus Development's 1-2-3 and VisiCorp's VisiCalc and programming languages such as Basic and Pascal are compatible with the product.

The software works with a minimum configuration of 64K, a single disk drive, parallel or serial adapter, PC-DOS 1.1 or 2.0 and a text-to-speech synthesizer such as a Votrax Type-N-Talk.

Solutions by Example, Inc., P.O. Box 307, New Town Branch, Boston, MA 02258; (617) 244-5880.

But can it cure a hangover? Just when you thought there were no truly useful applications for computers in the home, along comes this little gem from Softsmith. Micro Barmate has the answers to such perplexing and important questions as "Does blackberry liqueur float on vermouth?" or "Which goes in the mixing glass first — liquor or fruit juice?"

This software for Apple users is a collection of recipes for the well-stocked bar. You can pull choices from a main menu, and submenus permit you to enter and modify new recipes. The program also gives bar-stocking and party-planning hints, as well as calorie counts. The Micro Barmate sells for \$40. There is no word on whether the company provides after-sale support.

Softsmith, 1431 Doolittle Drive, San Leandro, CA 94577; (415) 430-2411.

Christine McGeever, researcher

Scott Mace

GAMES FOR GIRLS



There's something suspiciously resembling sexism in the game-software industry, partly because 95% or more of the game programmers are male. Even companies with a good number of women in marketing, management and design are at the mercy of the men who write the games.

The significance of this is apparent if you consider that games are introducing kids to computers and turning them on to the information age. Studies have shown that, contrary to the theme of popular Commodore commercials, kids who play games really do move on to bigger and better things. Despite the hype surrounding so-called computer literacy, the concept is real enough, and boys are often more computer literate than girls because most of the games on the market are aimed directly at them.

Elizabeth Stott and Lucy Ewell decided that they were going to do something about all this, so they learned to program the Apple II computer and started Rhiannon Software. Rhiannon's sole purpose is to create computer games for girls, and the first two are now out. They're adventure games that have females instead of males as central characters. The heroines (and the games) have names such as Jenny of the Prairie, Cave Girl Clair, Chelsea of the South Sea Islands and Lauren of the 25th Century.

The games are nonviolent and involve role-playing. Jenny becomes separated from her wagon train and must face the winter alone. Chelsea explores New Zealand for native treasures and confronts tropical dangers. Clair tends a fire and gathers seasonal food and medicinal plants. Lauren protects fragile life in a hostile desert environment.

Stott and Ewell aren't the only ones who think games for girls are a great idea.

At the Softcon show held recently in New Orleans, Addison-Wesley Publishing Company announced that it would market the entire Rhiannon line.

Rhiannon Software produces the first line of software for girls. Very, very few of the games out there now have female heroines. More typically, the woman is a prize or a danger to the man (as in B.C.'s *Quest for Tires*), and often the man is cast in the role of conqueror.

So I greeted Rhiannon Software with some joy. It seemed like a perfect alternative. I was a bit put off by their cover artwork, though — the boxes all look, well, too cute. I wondered if this software wouldn't be too boring for some girls or even if it might perpetuate the stereotypes of women and girls as being soft and nonassertive.

As for whether girls would find the games boring, I consulted an expert. Her

complicated for her to master in a half-hour sitting. She liked the second game, called *Jenny of the Prairie*, a lot more, although she couldn't understand what some of the graphics represented. For example, Jenny needs to collect weapons; however, Sally couldn't tell the difference on the screen between the tomahawk and the slingshot.

This game was more fun for her because it contained elements of surprise — every so often a dangerous animal would appear on the screen and Sally would have to respond suddenly. It also contained more levels of play than did *Cave Girl Clair*. Jenny must collect enough food for the winter, and Sally wound up talking to the screen, saying things like "Aren't you full yet?"

Hidden weapons were exciting to find, and Sally felt that she made more progress in this game than she did with Clair. Every

so often Jenny gets thirsty, and you must return her to the creek — you have to remember where the creek is — before you can gain more points.

One aspect of the game that Sally didn't like was that Jenny can't defend herself from wild animals — all she can do is run away.

Sally found that the third and most difficult level was the most challenging — it was harder to end the game because Jenny kept getting thirsty, and Sally had to move several screens back in order to find water for her.

Overall, Sally preferred Jenny of the Prairie because she found this game more challenging — it required her to make choices and to think about those choices before reaching decisions.

So the biggest complaint seems to be that the heroines of Rhiannon Software can't kill any of the animals; they can only run away. I can see both sides of the argument. In general, the less violence games contain the better. But if violence is a part of the everyday world they portray, and boy-oriented games don't shirk from portraying it accurately, perhaps girls' software should do likewise.

I welcome Cave Girl Clair and her friends to the game-software world. I hope they do well and that other developers put aside the easy buck in favor of positive fun and learning experiences for both sexes.



Cave Girl Clair is a game for girls from Rhiannon Software.

name is Sally Chin, the 13-year-old sister of *InfoWorld* reporter Kathy Chin, and Kathy wrote this report:

I thought Sally would be somewhat turned off because these are games for girls — Sally enjoys video games that most girls don't care for.

My preconceptions were wrong. Not only was she intrigued by the games, but also her patience lasted longer than did mine. In *Cave Girl Clair*, Clair, accompanied by her pet rabbit, must learn to survive on her own. "It's different from a lot of other games," Sally said. "You have to play it more than once."

Sally did feel, though, that this game had too many controls and that it was too

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RANA PUSHES HYBRID COMPUTING

Devices put two computers in one box

BY PEGGY WATT
Reporter

For those people who would like to run software written for other computers on their Apple or IBM machines, several hybrid products are now on the market. The hybrid concept is not new; several companies, using different approaches, have tried it and have had varying success. Rana Systems of Chatsworth, California, offers to turn your Apple IIe into an IBM PC with its Rana box. Quadram of Norcross, Georgia, claims to be able to turn an IBM and some IBM compatibles into imitation Apples with its Quadlink peripheral board. The recently released Dimension 68000 Professional Personal Computer from Micro Craft of Dallas, Texas, uses a coprocessor to enable it to behave like several different machines.

Rana suggests that you dispense with the Apple's disk drives and instead plug in the Rana 8086/2, which was released this month. The box contains an IBM-compatible coprocessor and dual-disk-drive system with a ROM (read-only memory) basic input/output system (BIOS) that emulates that of the IBM PC. The Rana box supports MS-DOS and PC-DOS. Version 2.0, has 256K RAM (random-access memory), expandable to 512K, and provides 360K of storage per double-sided drive. Rana claims that an Apple with box



The Apple IIe microcomputer with Rana's dual-disk-drive add-on box

that they're working on the keyboard problem and might be able to resolve it in the future. Rana research director Don Burtis says programs that tie their copy-protection scheme to IBM's disk-control-

of the two machines. Rana is quick to point out that with one modification, its box can run an IBM version of Lotus 1-2-3 (the other common compatibility test). With its unit, Rana provides software that includes a new program designed to support the graphics that 1-2-3 requires.

Problems that arise from differences in keyboards also necessitate a change if you want to run the IBM version of WordStar on Rana's Apple-turned-IBM machine, but instructions provided with the Rana tell you how to make the one-time change. Apple's variable-speed disk drive is not a problem, however, because the Rana drive can switch back and forth between IBM and Apple operation.

Rana says that it has had Apple's active support and cooperation in developing the product. The company also offers a list of 13 major software developers that certify that you can use the Rana system with their products. Among them are Ashton-Tate, Microsoft, Perfect Software, Shugart, Lotus and MicroPro.

Rana designed the Rana 8086/2 for the Apple IIe, according to Burtis. Rana representatives hint, but refuse to con-

The recently released Dimension 68000 Professional Personal Computer uses a coprocessor to enable it to behave like several different machines.

is 30% faster than the IBM computer that it imitates.

The hitch is that the \$1,795 drive cannot automatically run all IBM-compatible software. Programs that expect to work with IBM's keyboard configuration won't find it, and any programs that have been written specifically for the IBM PC and that ignore the BIOS programming won't work. Company representatives say

ler chip, which is a different style from Apple's, might have trouble functioning on the Rana.

The IBM-compatible Apple computer that Rana's box produces won't run Flight Simulator (one of the common "test programs" for true compatibility). Flight Simulator cannot work with the Rana-assisted screen because of slightly different timing values used in the graphics code

firm, that their system can also work on the unveiled portable Apple IIc. Apple owners can use the Rana drive even when it is running in the Apple mode. "We attempted to make it look like it belongs with an Apple system," he said of the beige 12½ × 7¼ × 8¼-inch box. Rana sells a package that includes a monitor, Rana box and Apple IIc for less than \$3,000.

A product that has an opposite function to that of the Rana box is the Quadlink, a peripheral card that plugs into the IBM PC to let it run Apple software. You can also use the Quadlink on the Columbia and Compaq computers if you use a different cable. Problems with the Quadlink after its initial appearance last year restricted it to running only programs not under the "half-track" protection afforded by Apple's disk drives. It is also restricted to using 40-character lines and uppercase text only. Quadram says the half-track conflict still exists because of the way IBM builds its drives, but it offers several enhancements in the version it released in November of 1983. The new model has an IBM serial port that you can configure in the Apple mode for parity, stop bit and baud rate; a parallel port with new control cards to help format information; and a new software utility called Quadcopy to allow information exchange between IBM and Apple disks. The Quadlink offers a 6502 CPU; 64K RAM; Applesoft ROM; Apple DOS 3.3; and Quadlink software, version 1.12 (1.0 in the first release) for a list price of \$680.

For potential customers who prefer a computer that combines the characteristics of both the IBM and the Apple machines — as well as a few others — Micro Craft offers its Dimension 68000 Professional Personal Computer. The firm claims that the unit can run software written for Apples, the IBM PC and TRS-80 as well as Unix- and CP/M-based computers. The machine normally runs the CP/M-68K operating system and comes with a version of CP/M 2.0 adapted to the 68000 microprocessor. The computer includes two double-sided, double-density, 40-track 5¼-inch disk drives, each with either 409K or 817K capacity. It sports 128K RAM, six expansion slots, a parallel printer port, a serial port and an 83-key IBM-style keyboard that has function keys and a numeric keypad.

The basic Dimension 68000 system — which can't yet imitate the IBM or Apple computers — retails for \$3,995. Each board that lets the Dimension imitate another system (Apple II Plus, TRS-80, Kaypro, Osborne and IBM compatibles) costs \$495. You must also increase the machine's memory to 256K in order to imitate any of those machines. A system package consisting of the basic machine

and all emulation boards costs \$6,230.

The company says Dimension's IBM emulator runs both Flight Simulator and Lotus 1-2-3 without problems. "We can't say it will run every program because we haven't tested every program," says

Scientific Machines, and he called on former engineers from the companies whose products he emulates to help build the multiprocessor product. Only about 500 machines have been released through 80 dealers throughout the country. Ac-



The Quadlink peripheral card allows the IBM PC to run Apple software.

Barbara Henry-Arnold, director of corporate communications. "But we have people who spend all their time testing software on the different systems." Micro Craft publishes a list of software that is compatible with the various emulations, and acknowledges any that don't run — then starts working on correcting the problem in its own software. She says the company keeps an eye on the top-selling programs to be sure that the Dimension can handle the most popular software. "It's fun watching somebody come in with a stack of disks and wanting to try them all."

The year-old company released the Dimension in late 1983 after unveiling it at Comdex. The Dimension's originator is Mike Carpenter, a former president of

cording to Henry-Arnold, "response has been overwhelming." Early insert advertising brought 50,000 inquiries, she says, reinforcing the company's basic contention that a hybrid machine is wanted. "We're having to apologize to the public for not being able to get information out promptly to everybody who has requested it."

A potential rival to the Dimension is under development in Coos Bay, Oregon. The fledgling Eltronix company is producing a dual CP/M and Z80-processor desktop microcomputer. For a price of \$1,995, it will include one 5¼-inch, single-sided double-density disk drive, 128K (expandable) RAM and numerous expansion slots and ports. Only demonstration models are currently available.

NEW PRODUCTS

Apple work-alike for under \$900: Microsci's transportable HAVAC (home/academic very affordable computer) is designed around the firm's own 5¼-inch, 164K disk drive. Although it isn't totally compatible with the Apple II family, the machine can run "several hundred" Apple games, according to the maker, as well as VisiCorp's VisiCalc, accounting software from BPI and Software Publishing's PFS: family of programs. It can also run The Home Accountant by Continental Software and Micro Illustrator with the KoalaPad by Koala Technologies. The

HAVAC can accept Apple assembler programs off the shelf.

The machine comes bundled with Microsci home, business and recreational software, including HAVAC DOS, Microsci's disk-operating system that converts Apple and Apple-compatible software to menu command for ease of use. Utilities software is also included for modem hookup.

The HAVAC package consists of 64K RAM (random-access memory), 8K ROM (read-only memory), 164K floppy-disk drive, 62-key detached keyboard, high-resolution color-graphics capabilities, a printer port, serial port, game port and video hookup. The supplied software

includes HAVAC DOS, Typewriter, Utilities and HAVACOM. Card File, Calculator and HAVAC Basic will be available later.

You can use the machine with either a Hayes 300 Smartmodem or any dumb 300-baud modem. Most color and black-and-white monitors are compatible.

The basic HAVAC sells for \$850.

Microsci Corporation, 2158 South



The HAVAC computer from Microsci

Hathaway Street, Santa Ana, CA 92705; (714) 241-5600.

Tape drive for micros termed "sexy" by maker: InterDyne of Milpitas, California, has developed a series of self-threading tape drives with removable reels that fit into 3½-inch floppy-disk-drive enclosures and provide any micro-computer with up to 40 megabytes of

increased storage space.

The tape units are tiny versions of the old floor-model computer-tape drives that are used for data storage with mainframes. Paul Gilovich, chairman and chief executive officer of InterDyne, admits that "tape has not been considered a very sexy medium, but it's being reborn because backing up data on floppies and hard disks is paramount." You can use the tape drives to load software and for independent applications, as well as for backing up files. InterDyne uses standard floppy-disk interfaces and components to make it easy to build the drives into microcomputers.

The drives have doors to accept 325-foot reels of tape. Depending on the number of tracks on the tape, the storage capacity can be either 5, 10, 20 or 40 megabytes. Additional reels of tape would cost about \$10 to \$15 each, InterDyne estimates.

The drive units come in two sizes: the Sony-type 3½-inch-drive enclosure or a half-height 5¼-inch-drive enclosure. InterDyne will begin selling evaluation units as production units that can be incorporated into new computers this month. Gilovich said no prices have been set, but he estimated the cost will be about half the normal cost of Winchester drives that have the same storage capacities.

Dual processing the name of the game: Polymorphic Systems, of Santa Barbara, California, has packaged a pair of microprocessors into one single-user microcomputer, thereby making it capable of running CP/M, Concurrent CP/M-86 and MS-DOS programs. The Poly 8/16 combines an 8-bit Z80A and a 16-bit 80186 processor (running at 8MHz) on two circuit boards based on the S100 bus standard.

The machine is normally supplied with 256K RAM, but that can be increased to a maximum of 1 megabyte — though owners will have to wait for the introduction of 256K RAM chips, not expected until late this year.

Storage for the system is provided by one half-height 5¼-inch floppy that provides 800K of space. Four RS-232C/RS-422 serial ports and two parallel ports are also included. The display is in a separate terminal; it is a 14-inch monochrome unit. A detached, low-profile keyboard completes the system.

Price for the basic unit is \$4495 suggested retail.

Polymorphic Systems, 460 Ward Drive, Santa Barbara, CA 93111; (805) 967-0468.

Christine McGeever, researcher

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TEENS TACKLE PROGRAMMING

Young entrepreneurs enter the software industry hoping for a hit

BY DENISE CARUSO

Reporter

Today's highly competitive microcomputer-software industry counts a number of enterprising teenagers among its ranks. With skills developed well beyond the game level of computer experience, some are even confident enough, at ages half that of traditional programmers, to attempt mainstream products. While their families look on with admiration, these young programmers work away at their home computers, hoping they'll produce a hit.

It might be a perfect setup for the stage-mother syndrome — doting parents prodding their children into high-visibility careers. But where the streetwise stage mother is typically the key influence on an aspiring actor or actress's career, today's young computerphiles are more likely to take charge of their own destiny.

"I hope I'm not a stage mother," says Betty Milkow of Framingham, Massachusetts, the mother of Eddie Milkow, 17. Last October Eddie incorporated his own software company called Woklim Industries. "I hope he's directing me and not the other way around."

"My mom basically works for me," says Milkow.

So far Woklim has released three educational games and a graphics program for the Apple II, with more products to come. Milkow's software is published under the Star Dust Division of Woklim, and each package carries the hand-and-computer drawn logo of a frog on a crescent moon. "I wrote all the documentation myself, but my mother did the frog," he says.

He describes his mother as secretary and official product tester. "We have an agreement — if she can play it, then the average five-year-old can!"

She agrees with her son's assessment. "The computer is fun," she says, "but unless somebody tells me which buttons to push, I'm lost. I just encourage him."

It doesn't seem, however, that Milkow needs a lot of encouragement. A self-taught programmer, he got his introduction to computers one summer when he "fell in love" with the Apple, found a book on programming and learned how to do it. He bicycled every day to a computer store near his house, and finally got an Apple II

Plus when he was 16 years old. He now works on three Commodore machines — a CBM, a PET (an early Commodore micro) and a VIC 20 — spending five to six hours a day on weekdays and six to eight hours a day on weekends programming.

"Whatever he does, he always does with an intensity," says Mrs. Milkow. "We had very little to do with his getting involved with computers. It was all



Cori Grimm (seated) creates computer graphics such as the Bumble Plot screen at right.

Eddie."

Mrs. Milkow says she avoided getting Eddie a home computer for a long time. "But we couldn't pull him away, so it was either buy it or live in the stores. It wasn't too long before he was taking the console apart to see what made it tick, and next the cartridge had to be opened to see the little thing inside that was fascinating. After that, there was nothing left to do but go out and get an Apple."

Milkow's been at it ever since. He says he's trying to find a distributor for his programs, which he is now marketing himself. So far he can only afford a classified advertisement in a monthly Apple magazine, which nets him between five and ten sales a week.

Presently, Milkow is working on new programs with two friends, Brian Finkel and Rob Dantona. "I've got some ideas about programs for the deaf, and Dantona is sort of the technical advisor for the deaf part. He does the sign language, I do the programming." He hopes to release the product by the end of summer. He is also working on new educational, arcade-style games similar to his Word Rescue, Math Mania and Foreign Frenzy (a language tutor).

Milkow spares no code on his inexpensive (about \$25 each) software. "My theory is giving people the most for their money, and giving it for as little money as possible," he says. "In Foreign Frenzy, for

example, we include 30 levels of French and Spanish, and we also include a level generator so people can enter their own languages and words. We also include a free data disk along with the program disk, so they can save whatever level they've been working at."

"He's always been this motivated," says Mrs. Milkow of her son's enthusiasm. "It's been very exciting for me, there's



always something going on." But two years ago, what was going on was that Betty Milkow had a high-school dropout on her hands. "I knew he was having problems. His teachers were saying his perceptions were beyond the other kids. Unfortunately, at the time I didn't do much about it. They wanted him to drop out of math into some silly art class, just so they could pass him to the next grade. But we went to an educational counselor who tested Eddie and said, 'This boy is definitely very bright.'"

What turned things around for Milkow was enrolling in a 65-student private school called Palfrey, where he now teaches a computer class and does some private tutoring to make some extra money. "He wanted to go on," says Mrs. Milkow. "And there, they understand the needs of the individual child. He's able to express himself there. In public schools, because of time restraints and not enough resources, they have to cater to a certain mediocrity."

Another whiz kid, Edward Svoboda, Jr., of Cupertino, California, also found challenges hard to come by in the educational system. Svoboda, 15, is the founder, owner and operator of a Remote CP/M system called SiMMS that makes more than 2,000 public-domain software programs available for users of the CP/M operating system.

His mother, Mary Svoboda, says that

Edward learned the basics in fifth grade at a special school for gifted students. "After that, he felt like there was so much for him to learn. They wouldn't accept him at DeAnza College [a local community college] because of his age, but Stanford University heard about him and took an interest in him."

That interest yielded for Svoboda, at



Eddie and Betty Milkow

age 14, a semester at Stanford's Center for Information Technology and a special student account that gave him access to a campus mainframe computer.

Mrs. Svoboda, like Mrs. Milkow, is reticent to take any credit for her son's success, although she is certainly one of his staunchest supporters.

"I don't have any computer background. I just learned watching my son," she says. She wouldn't pose with him for a photo, because she feels she doesn't deserve any of the credit for his accomplishments. "He's worked so hard all on his own; I really haven't had anything to do with it. Ed operates everything himself. I just look it over to make sure that everything is in line. I also go through his mail to make sure there is nothing in there he shouldn't see, you know, because of his age."

Svoboda's system was once called Oracle, but is now called SIMMS because a Southern California bulletin board already claimed the first name. Mrs. Svoboda says the original Oracle, started in 1979, was "one of those obscene-type things," and Eddie decided he'd rather change the name than risk being associated with it. (Hackers using obscenities was one consideration in Svoboda's decision to make users register on his communications system when he got it up and running last August).

Svoboda's main purpose for running the bulletin board is to provide public-domain software. "I have just about everything in public domain on-line," he

says. "There's tips for users, business programs, utility programs, accounting programs. There's about 3,000 files on the system and about 2,000 programs, although lots of those are 20-line programs. Fifty of them actually stand out as real programs. They're all for CP/M, although I have a small IBM section that I'm not pushing. Ninety-five percent is for 8-bit machines."

Svoboda had only worked with CP/M for about a month before he put his Remote on-line. He'd been a veteran Apple operator until the president of CompuPro Computers, William Godbout, gave him a CompuPro in November 1983 after reading a newspaper article about him.

In fact, most of the equipment he uses — his computer, disks, two modems, a terminal, dBase II, et cetera — was donated or loaned to Svoboda. It had to be — the system has been running on his own college money.

"Eddie's taken about \$2,000 out of his college fund to support the system. Now he's asking for a \$25 donation," says Mrs. Svoboda. "But people who can't afford it pay what they can. Ed's always felt he wanted to do it for free. But now he's working with an organization in Palo Alto, and all the money he gets in goes to a non-profit organization for underprivileged and minority kids to learn about computing."

Despite the success of solo entrepreneurs such as Milkow and Svoboda, some people in the software industry don't feel there's a place for teens in it. A few years ago, Ken Williams, president of Sierra On-Line, employed more than ten underprogrammers (younger than 21) to write games. He estimated that one of his programmers, Frogger author John Harris, "made 200 to 300 grand off us." Now, he says, the older programmers with degrees are trying to tap into games.

"The industry grew up — there's no place for kids," says Williams. "I was glad to see them go. They were really immature." He doesn't hire kids anymore. "I remember back in those days, working with young kids, the game industry was thought of as too frivolous. It wasn't steady employment for 'real' programmers. It was more a case that the kids were there doing it, but now that the game industry is rolling, there's no place for them."

Cori Grimm and her mother Leslie might argue that fact. In fact, the entire Grimm family might have something to say about it. Cori (short for Corinne) is now 14, but at age 11 she was already cranking out graphics for programs published by The Learning Company (TLC), which is quickly becoming one of the most highly regarded educational software companies in the industry. "When we got the

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THE INDUSTRY

computer, she was ten," says Mrs. Grimm, a full-time programmer for TLC and one of the company's founders. She and her husband, who were both teachers at the time, decided to buy an Apple as a nifty toy.

Their play led to a job with Apple Computers for her husband Bill. He took some of his freshly coded programs to a computer club, an Apple recruiter who was there looked at them and Bill's days as a disenchanted teacher came to an end. It eventually yielded their 16-year-old daughter Cindy a job with TLC as well, says Leslie. "She's become one of the best program testers the company has."

Cori's first computer playing consisted of twisting the paddles on an Apple program called Color Sketch. "She just made hundreds of pictures, nifty ones of dragons and castles. I was sort of tinkering around with the spelling program for the learning disabled kids at the school and got the idea of putting it together using treasure chests and spelling demons to give spelling tests. I did the programming and Cori did the pictures, and it was one of TLC's first products, Magic Spells."

Cori's also done the graphics for TLC's Moptown Parade and Hotel, and most of the graphics for the Bumble programs. Her enjoyment of working with graphics is based on a very simple premise.

"The main thing I like about it is that you can erase without smearing up your paper," she says. "And also, I like working with squares. You can make straight lines without using a ruler, you can just go straight down the screen."

Working closely with her mother has both advantages and disadvantages, as anyone involved in a family business can attest. "She's here if I need opinions on anything. It's not like working with a stranger, she's someone you can really talk to and get honest opinions from," says Cori. "But then, sometimes you get opinions you don't want to hear. Something like, 'The whole picture should be moved over three dots.'"

Mrs. Grimm says Cori is considered a "gifted child," although she says her daughter is very modest about that. "She does very well in school," she says. "The interesting thing is she never did draw with pencil and paper before. She learned her art on the computer. Now she can back it off onto pencil and paper. She took the reverse direction, and now her art teacher considers her an artist."

Despite her obvious talent, Cori entertains no long-term desire to stay involved in the computer industry. "I'll probably stay in it as long as my mom does, probably until I move out of the house."

And her mother, in true nonstage-mother style, isn't pushing it. "I really don't know what she's going to do."

Q&A: FRANCIS PANDOLFI

BY SCOTT MACE

Senior Writer

Few software companies have risen to fame faster than Scarborough Systems of Tarrytown, New York. Last fall, after acquiring Lightning Software and its hit program MasterType, Scarborough Systems moved quickly to offer several home-computer software packages such as Picture Writer, Song Writer and Phi Beta Filer. Its latest offering is Run for the Money, a financial game by Tom Snyder.

Francis Pandolfi, president of Scarborough, previously worked for CBS Publishing as vice-president/group publisher of that company's special-interest magazine group.

Is Scarborough writing more home software for the higher-end markets than in the past?

We think that's going to be the biggest part of the market over the next few years; we are developing for the IBM PC and the Macintosh [now]. We're putting this Tom Snyder game [Run for the Money] on the Macintosh. It'll be one of the first games that goes on the Mac. We have a lot of confidence in the upper end of the market. The machines are so powerful that you can build much more into your product. I think it's going to stimulate the growth of the whole industry.

Are game prices in that area any higher than they would be in the low end?

We do plan to charge a small premium for our products that go on those high-end machines. It appears at this point as if the high-end machines can support that anyway. Our experience with MasterType has been that we sell IBM at \$49.95 versus the others at \$39.95, and we sell an awful lot of IBM. I'm hard pressed to think we'd sell a lot more at \$39.95.

What does your research tell you about the IBM PC buyers? We hear they're buying phenomenal amounts of software.

I think it's much too early to say the IBM-hardware owner is going to be as aggressive a software acquirer as the Apple-hardware owner. I think there's no question but that somebody with an Apple



Francis Pandolfi of Scarborough Systems

buys more units of software per piece of hardware than any other piece of hardware around, by a long shot.

Do you think we'll see a shakeout in the software industry?

Absolutely. The shakeout's going to manifest itself in terms of acquisitions and failures. We just completed what I think is the largest private financing for a home-oriented software company ever done. Six million dollars. It puts us in a position to do two things: take advantage of opportunity and make mistakes. Without the chance to do both of those things, you won't survive. That's what the money is all about. Marketing and sales promotion are expensive. The noise level in this industry has risen to such a high pitch that you need a fortune to be heard.

Do you think we're going to have to reach a whole new level of ease of use in that area, as we've seen with programs such as the Bank Street Writer word-processing program?

Yes. That's what's driving the marketplace. People who are buying these \$200 and \$300 computers — you can't put a big manual in front of them. It's discouraging. By the way, what's out there today is not particularly easy to use.

Does documentation have to go away

for that to happen?

No, because documentation always provides for supplementary needs. But products whose documentation comes from the screen alone are going to be much more successful. We will always provide documentation, because people who are serious about the products usually want to go further.

Manufacturing documentation is a big pain. One of the biggest problems in the industry today is getting products out. It's always been a problem. But today it's more of a problem than ever, because you cannot spend the money needed on advertising if all you've got are one or two versions of a product. And the main thing that hangs us up in getting product out — and I've got to believe it's the same for our competition — is the documentation.

Do you see any market for cartridge software for the PCjr?

My feeling is it's not going to be necessary to produce cartridge software for the PCjr, because the only functional PCjr system is one that costs over \$1,000, and anybody who spends over \$1,000 is going to have a disk drive and they're going to be able to use disk software, which is far more flexible. We're not planning to produce any cartridges for the PCjr.

Any plans to talk to Commodore about licensing your products to that company?

No. We would like to work with Commodore, because we think they're good marketers and they've got good distribution. But at this point, I think the shoe is on the other foot. I don't believe Commodore is interested in talking to third-party publishers seriously, at least in terms of joint ventures. It doesn't make any sense for us to license products to them. We've got good distribution now.

What do you think about Commodore's chances of taking over distribution of software for the 64?

It may be their thrust, but I think there are too many of us with darned good products. I'm not going to comment on the quality of their products, but I think there are a lot of other excellent products out there that will keep them from ever taking over.

d foreign language.

.list files

DATABASE	FILES	NBRRCDS	LAST UPDATE
HOMES	DBF	1005	11/01/83

.use homes

.list homes selling for < 50000

*** SYNTAX ERROR *** RE-ENTER

.list structure

FLD	NAME	TYPE	WIDTH	DEC
001	ADDRESS	C	025	
002	SELLPRICE	N	009	002
003	AGENT	C	025	

.list for sellprice < 50000

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DOW JONES NEWS/RETRIEVAL

A collection of business-, financial- and general-news data bases

BY BRAD BALDWIN
Contributor

Dow Jones News/Retrieval (DJN/R) is a comprehensive collection of business-, financial- and general-news data bases offered by Dow Jones & Company, publisher of *Barron's* and *The Wall Street Journal*. Toss away any preconception that DJN/R is a stuffy, one-dimensional data-base service designed only for an elite corps of stock analysts and Wall Street wizards. Far from it — DJN/R also provides entertaining movie reviews, current weather and sports reports, convenient electronic shopping and inexpensive electronic mail. But its original function is where it excels — providing thorough and up-to-date business and financial information on stock markets, corporations, economic events, money markets, forecasts and even Japanese markets.

Most people subscribe to DJN/R via software promotional plans that offer one free hour of log-on time. Another way is to call the service directly. To receive a password, the user contacts a DJN/R sales representative (800-257-5114) who provides the local phone numbers and instructions for logging on to the system. The Tymnet and Telenet timesharing networks provide a link to the Dow Jones News/Retrieval service and have area codes for most of the major cities nationwide. The subscriber needs a 300- or 1,200-baud modem, communications or applications software and a computer.

A rather harried-sounding DJN/R representative gave us incomplete log-on codes and almost no information except for a password and several local phone numbers. Although clear instructions are found in the *Directory and Operating Guide*, it's not immediately available to users subscribing through software promotional plans.

Once connected, DJN/R is fairly simple to use and becomes easier with just a little familiarity. One-word mnemonic commands are used to gain access to any of the 27 data bases. Jumping back and forth

Brad Baldwin of Sheehan and Baldwin Communications, was formerly an engineer at IBM and technical editor with *Osborne Computer's* user magazine, *The Portable Companion*.

between the data bases is quickly accomplished through structures that allow execution of any command from within any data base. The response time between command and information output is phe-

InfoWorld Report Card

Dow Jones News/Retrieval



	Poor	Fair	Good	Excellent
Information Content	☐	☐	☐	☒
Performance	☐	☐	☒	☐
Documentation	☐	☒	☐	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☐	☒

Summary: In the final analysis, DJN/R is informative, entertaining and well worth the money. Besides, there's something inherently fascinating about pulling fast-breaking stock-market and business news hot off the wire.

Product details: Connect prices vary according to the membership plan, modem baud rate and time of day. Generally, 300-baud modem users can expect to pay from 20 cents to 90 cents per minute during non-prime time and from 60 cents to \$1.20 per minute during prime time. DJN/R bills 1,200-baud-modem users only a slight premium for the increase in information-gathering capability. The higher prices range from 60 cents to 90 cents per minute during non-prime time and from 75 cents to \$1.50 per minute during prime time. With the standard plan, there is no minimum monthly charge. Dow Jones News/Retrieval Service, P.O. Box 300, Princeton, New Jersey 08540; 800-257-5114.

nominal — from one to five seconds for even the more complex multiple searches. Considering the scope of the data bases and the fact that DJN/R uses a timeshared network, phenomenal is certainly an appropriate superlative.

A minor annoyance encountered while entering text or commands was the inability to correct our keystroke errors. DJN/R ignored or, at best, responded very slowly to the backspace key. On-line editing could be improved by fixing this problem and adding rudimentary lined-editing commands.

The most important aspects of a commercial data base are the breadth, depth and accuracy of its information. DJN/R is no lightweight in these departments. One category, Dow Jones News (DJN), has information on over 80 news categories, 7,000 U.S. and Canadian companies and 60 industries. Also, news extracts are provided from the pages of *The Wall Street Journal*, *Barron's*, and the *Dow Jones News Service*. You can find headlines that were just written or that were printed up to five years ago.

A text-search utility can use any combination of words or dates to search for news stories that were printed as far back as June of 1979. For example, by typing the words *bankrupt* and *computer*, you'll find articles related to troubled computer companies.

Approximately ten of the DJN/R data bases cover information pertaining to investments, including current and historical quotes from the four major stock exchanges. One data base, called Medgen, supplies information on corporate earnings, dividends, price-earnings ratios and stock performance. Updated weekly, it contains detailed information on several thousand companies listed on the New York and American stock exchanges.

Another service lists financial and management information on public corporations that is based on documents filed with the Securities and Exchange Commission, and includes such items as corporate profiles, balance sheets, income statements and names of officers and directors (each with salary and age).

The Cineman Movie Reviews service previews coming attractions and is updated weekly. The 50 current-movie reviews make entertaining reading. The Sports Report handles all data and news stories

pertaining to amateur, college and professional sports.

DJN/R does have a few warts, especially in the area of writing information to the screen. The system's data bases transmit 15-line blocks of data headed by a line of unimportant (to us) data-base computer-filing notes. Following the block, prompts instruct you to press a key to proceed to

DJN/R assumes that the user is inexperienced and will never memorize menus or commands.

the next block, thereby slowing data transfer and forcing the user to stay with the computer. This is fine if you read the screen, but since we wanted to transfer relevant data to a hard disk while on-line, the information did not need to be immediately scrutinized. Any pause between blocks wastes time — time you pay for. It also creates the need to go through the extra hassle of running the material through a word processor to delete prompt commands before printing.

DJN/R assumes that the user is inexperienced and will never memorize commands, menus or theories of opera-

tion. The experienced user is prompted to death — nothing is more frustrating than watching lengthy help messages you've seen 145 times before come across at 300 baud. Public bulletin-board systems have long recognized this problem and many have incorporated an expert-user toggle into the system. These allow you to shut off all superfluous messages and prompts. Like many other commercial-information data bases or interactive programs, DJN/R needs to prune unnecessary messages and streamline the system for knowledgeable and impatient users.

The operating guide makes a reasonable stab at organizing DJN/R's many features, functions and reference data. It could be more complete, better organized and have clearer examples. A section on command summaries is sorely needed. In one instance, we searched high and low for a command for the basic function used to find out if the Dow Jones averages were up or down. After finding the answer, we called customer-support representatives to check their knowledge on the subject. Though the representatives were courteous and seemed genuinely interested in helping us, we received only one correct answer out of three.

DJN/S offers additional support in a free on-line customer newsletter that supplies information about data bases, enhancements, application suggestions and prices. To obtain help while using one of the data bases, the user types "HELP" after the name of the data base. Simple instructions on how to retrieve information about that data base appear on the screen. Help commands incur the standard time costs.

Over the course of a year, we have

PARTIAL LIST OF DATA BASES OFFERED BY DJN/R

Dow Jones News
Free-text News Search
Economic News and Forecast
Wall Street Journal Highlights
Current Quotes (stocks)
Historical Quotes (stocks)
Dow Jones Averages
Dictionary of Investment Terms
Encyclopedia
Dow Jones Menu
Movie Reviews
UPI World Report
Electronic Shopping
Stock Symbols
Sports Report
Wall Street Week Transcripts
National Weather Report
Data on Public Companies
Corporate Earnings Estimator
Rankings of Corp.'s & Industries
Japanese Economic Information
Media General Financial Services
Money Market Services Forecast
Official Airline Guide
Merrill Lynch Research Service
Customer Service
MCI Electronic Mail

used different combinations of modems, computers and communications software to connect to Tymnet without problems. The signal is clean and strong, and the connection has never been lost due to system/phone glitches. Access to the system is always gained immediately upon logging on.

TELEVIDEO TPC-1 *A portable CP/M-based computer*

BY MARTY PETERSEN
Contributor

Adam Osborne started a good thing when he came out with his portable computer. Since then, manufacturers have been hopping on the portable bandwagon and consumers have benefited from the ever-increasing performance and plummeting prices of their products.

One result of this trend is the TeleVideo TPC-1 portable computer, a ma-

Marty Petersen designs and develops engineering programs for use in manufacturing broadcasting equipment. A six-year computer user, he has several micros of his own, and has been published in leading publications.

chine that deserves the attention of anyone who wants a portable 8-bit (Z80A 4 MHz), 64K (expandable to 128K), CP/M (2.2) computer.

The computer is relatively compact, measuring only 8 x 15 x 18 inches. But it weighs a hefty 32 pounds and is not compact enough to fit under most airline seats. (According to American Airlines, for example, the maximum dimensions of underseat luggage are 9 x 13 x 23 inches, so the TPC-1 misses by just a couple inches.)

The computer's 9-inch (diagonal) screen displays 24 lines of 80 characters each and has a graphics resolution of 640 x 240 pixels. The phosphor is an unusual color — a yellow-green that seems to be a compromise between the

widely used green and the increasingly popular amber. You can use a small switch to choose between a normal black background with yellow-green lettering or the reverse. If you switch between the two methods, you will have to make some adjustments with the brightness control; otherwise, the reverse video is likely to knock your socks off.

The sound of the fan is absent — but so is the fan. Except for occasional disk movement (and clacking keys that we'll discuss later), the computer is perfectly silent. The system was designed using the principles of convection cooling, which eliminates the need to use a fan to force air through the unit. In practice this doesn't always work, but TeleVideo has succeeded where others have not. We left the computer on 24 hours a day for two weeks and noticed no problems associated with overheating. Occasionally, heat-induced fluctuations in the power supply produced a barely noticeable ripple or wave that



TeleVideo's TPC-I transportable CP/M computer comes with graphics and other software.

fluttered over the screen when in the reverse video mode, but that was not a real problem.

You can buy a unit with either one or two 5¼-inch, half-height, double-sided double-density (DSDD) disk drives built in. The disks are soft-sector formatted, making total disk capacity nearly 370K.

In a recessed compartment on the back of the computer is a parallel port for a printer and an RS-232C serial port for an asynchronous modem. Both have standard DB-25 connectors. You can use small switches to select from a number of baud rates from 75 to 9,600 baud. These switches sit in the recessed compartment and are easily accessible; you don't have to take the computer apart to set them. (The computer was designed to be opened only by someone who knows the location of every hidden fastener. Besides, there are no slots for plug-in boards, or anything like that, inside the box.)

The back compartment has a 115/230-volt selector switch, which means that you can take the TPC-I on international jaunts. The compartment also has two telephone-type connectors, one to connect to the keyboard and the other to accommodate a SuperMouse pointing device (not included).

Two slide latches attach the keyboard to the front of the computer (the keyboard doubles as the front cover for transportation purposes). We would prefer both a left-hand and a right-hand latch instead of two right-hand latches to lock the keyboard in place. We would also prefer to have the coiled keyboard cord connect to the front of the computer instead of the back.

The keyboard resembles that of an IBM PC. The now-familiar ten function keys appear on the left, it has the same central cluster of QWERTY keys and the

same numeric keypad shows up on the right. The right-hand section has the familiar PgUp, PgDn, Ins, Del and other IBM PC-type keys. The Enter, Shift, Back space and Tab keys are labeled with arrows. Using keys F1 through F6 with the Control and Shift keys increases the number of usable function keys to 32.

The keyboard, with the keyclick is turned on, is a bit noisy. If you are not a touch typist or for some other reason don't like the keyclick, you can shut it off. Two plastic tabs at the bottom rear of the keyboard can be used to elevate its back. If you push forward on the keyboard, the tabs fold back in and the keyboard collapses.

The software that comes packaged with the computer includes the CP/M operating system, version 2.2 (which includes the GSX-80 Graphics System Extension). There is also a package called TeleSolutions 80 that consists of TeleWrite, a word processor; TeleCalc, an electronic spreadsheet; and TeleChart, a graphics-display utility. The TeleCalc program leaves much to be desired, but the version of CP/M (2.2) for this computer is quite good and will handle application programs such as WordStar or SuperCalc, so you are not stuck with the supplied software.

The TPC-I is easy to set up. There are no hidden switches and you don't have to dismantle anything. The setup switches reside in the recessed back compartment. You can control voltage (115/230 volts), line frequency (50 or 60 Hz), baud rate of modem port (75 to 9,600), the display (normal/reverse) and local/remote operation, which allows your computer to work by itself or as part of a network.

When you first turn on the computer the function keys have predefined functions. There is a table in the manual that

shows what these are. This is followed by instructions on how to reprogram the codes to your own specifications. The function keys can be used to send codes that represent frequently used Escape- or Control-key sequences used in text editing or other applications. In addition, you can create a message associated with each key that can be displayed on the screen.

The computer is a standard (if there is such a thing) CP/M computer and is no harder or easier to use than any of the others. It has a screen that you can adjust to the best viewing angle and that takes up a relatively small amount of space on your desktop or work area. The setup switches can be easily reached.

The documentation consists of three spiral-bound, 8½ × 11-inch manuals. These are a user's manual, a system reference manual and a TeleSolutions 80 manual for the included software. You can also obtain a *GSX-80 Programmer's Manual*, though this is not included in the package. Except for the glaring absence of an index in all three manuals, they are

InfoWorld Report Card

TPC-I



	Poor	Fair	Good	Excellent
Setup	☐	☐	☐	☒
Ease of Use	☐	☐	☒	☐
Performance	☐	☐	☒	☐
Documentation	☐	☐	☒	☐
Serviceability	☐	☐	☒	☐

Summary: At 32 pounds, this transportable CP/M-based machine is not too light, but for the price it gives you a good unit. Especially nice are the included graphics capabilities.

Product details: List price, \$1,600. Includes Z80A CPU running CP/M 2.2; 64K RAM (expandable to 128 K); one or two 5¼-inch DSDD disk drives; RS-232C serial port; GSX-80 Graphics Driver; three applications. Manufactured by TeleVideo Systems, Inc., 1170 Morse Avenue, Sunnyvale, CA 96086; (408) 745-7760.

otherwise quite good. They explain what you should do, when you should do it and how to do it in a logical order. The discussion is liberally augmented with photographs, charts and diagrams. The appendices themselves will serve as adequate reference manuals.

TeleVideo provides warranties for its product, exclusive of the software, to

dealers for 180 days and to the user for 90 days. Nationwide service is provided by TRW, which has been a leading manufacturer of electronic equipment for decades. It boasts a service organization of 3,000 professionals who are located in over a 100 district offices.

When IBM announced its personal computer, it created a general perception

that the 8-bit microprocessor was dead. Despite the mania that IBM has created, 8-bit computers are very much alive and will continue to be around for a long time. The TeleVideo TPC-1 represents a new entry in the 8-bit arena that should be considered seriously. The price is very reasonable considering the features that this computer possesses.

ALPHASYNTAURI MUSIC SYSTEM

A series of three programs for creating music

BY KATHY CHIN

Reporter

If you've always dreamed of having an entire orchestra at your fingertips, but never had the money to pay for all the instruments, the alphaSyntauri music system is for you. While this product doesn't guarantee that you will turn into another Leonard Bernstein, you will be able to tap that hidden musical genius, brush up on fundamentals and, more importantly, have fun.

Three sets of software are available and are tailored for all kinds of owners, from the novice to the skilled musician. A well-written but brief user manual comes in a three-ring binder. Also available are three sets of courseware workbooks: one is geared for adult beginners; another is a series of beginners' workbooks for children; and the third, for more experienced musicians, is a set of rock, jazz and blues improvisations. For the family that has a keen interest in music and computers, the package will provide hours of education and entertainment.

Before plunking down your money, though, bear in mind the potential hidden costs. In addition to the Apple II (or compatible machine) on which the software runs, you will need an alphaSyntauri synthesizer. You would do well to have a color monitor and you won't hear the true potential of the device without a good stereo system. If you don't already have these things, the cost of using these programs could be more than you anticipated.

The company does sell the software bundled with either its five-octave keyboard or its four-octave keyboard. The largest bundle, which consists of the five-octave keyboard, other circuit boards, interface cable, two of the software sets and your choice of one of the courseware methods costs \$1,495. A system appropriate for beginners — consisting of the novice software and the five-octave

keyboard — costs \$1,295; with the four-octave it costs \$995. All in all, it's not a low-cost investment.

You'll also have to get used to some of the peculiarities of the synthesizer keyboard. There is a slight delay between when you press a key and when you hear the note. Another minor distraction is the

clicking that occurs each time you press a key.

The software, though, is generally first rate. The first set of disks, created for the novice, is appropriately dubbed the *Simply Music* series. This series features a *Personal Song* disk, a *Christmas tunes* disk and a *children's songs* disk. The publisher made a smart move by including a demo disk that provides an overview of the many capabilities of *Simply Music*.

Simply Music features five main screen menus. The instrument selection menu allows you to choose from as many as ten instruments. The playback/recording menu lets you play back a song, record a song, transpose the key of a song and slow down or speed up a song. The orchestration menu lets you control the instruments in a song. The song menu allows you to choose songs from disks or save songs on disks.

Though these four screens are visually dull, the fifth screen lets you see the notes moving on the keyboard or on the music staff. Notes that appear in the so-called bar mode are represented by colored bars that move around on the screen.

With *Simply Music* you can create, save or record songs. A built-in metronome allows you to keep time. You can go up or down several octaves on a piece you have created. You can dub several other instruments over what you have recorded, so when you play back the music it will turn your living room into a concert hall (provided your stereo is that good.)

With *Simply Music* the beginner will learn how to read notes, learn the keys on the keyboard and create a few songs. Sounds great, doesn't it? But a word of caution: what you'll really wind up doing is learning the piano by rote. You may pick up fundamental music concepts, but you won't learn something that is critical in musicianship — technique. For instance, *Simply Music* doesn't tell you which finger belongs where on the keyboard. It doesn't describe fingering style or emphasis or give hints on how to improve musically.

The accompanying handbook called *MusicMaster I* skims over the basics. After you go through the book, you can become overwhelmed by the number of things you can do with the system. While it is simple at the start, it can become extremely complex. You won't know

InfoWorld Report Card

alphaSyntauri

	Poor	Fair	Good	Excellent
Performance	☐	☐	☐	☒
Documentation	☐	☒	☐	☐
Ease of Use	☐	☐	☒	☐
Error Handling	☐	☐	☒	☐

Summary: The alphaSyntauri series of three music programs — *Simply Music*, *alphaPlus* and *Metatrak II* — is a good tool for creating music with the computer, although it requires a costly synthesizer keyboard as well. We think it is best for those with some musical skill and computer knowledge.

Product details: List price, *Simply Music*, \$179.95; *alphaPlus*, \$150; *Metatrak II*, \$179. Requires Apple II, II Plus or IIe with 64K random-access memory; synthesizer; interface cable; plug-in boards. Published by Syntauri Corporation, 1670 South Applethrift Blvd., Suite 116, San Mateo, CA 94402; (415) 574-3335.

Frank Leong, Jr. contributed to this review.



You can buy the alphaSyntauri music packages individually or bundled with a keyboard.

where to begin or really what to do. Sorry, this won't replace piano lessons. But this could be a great teachers' tool and a time saver in the classroom.

Moving up on the ladder of complexity, the alphaPlus series is designed for knowledgeable musicians. This intermediate software gives more instructions on using various instruments than on making music. Using the alphaPlus operating system disk, you can group your music into albums and songs. Like Simply Music, alphaPlus allows you to play back prerecorded tunes that are included with the package, play along with the music or improvise by mixing instruments. The uses are limited only by your imagination. You can record up to 2,000 notes and save them on the disk.

The information the program needs to reproduce the sounds of ten instruments — such as piano, flute and clarinet — are supplied with the software. But with alphaPlus music enthusiasts can go beyond what's given and create their own instruments using a waveform feature. You can create a waveform graph — a pictorial representation of sound, displayed with amplitude on the vertical axis and time on the horizontal axis.

You create a musical instrument by varying one of four basic waveforms: sine, triangle, square and sawtooth. To adequately alter the waveform, you will need to know how those sounds are duplicated electronically.

The computer will build the sound for you based on the graph you create and enhance. By changing the harmonics of the

wave form, we were able to create everything from delicate music-box tones to eerie space music.

Though you might be surprised at the flexibility of the program, the user interface is shoddy at this level because it assumes the expert musician is also an expert computer user. The screen display merely shows parameters for instrumentation, forcing users to turn to the manual for instruction. Users who would most benefit from this feature would need some knowledge of computer science and signal processing.

The screen displays on the sophisticated Metatrak II program, the Cadillac of

claims, but you can bet you'll wait a good two to three minutes for the program to load. As in Simply Music, there is a built-in metronome that helps even the most skilled musicians keep time.

Metatrak II is the most versatile of the three series. For instance, you can define certain sections of the keyboard to sound like different instruments. The lower half can be designated as bells and the upper half as an organ. Each recording can hold up to 3,000 notes. The company says it will boost the number of notes to 20,000 in future versions.

On Simply Music, alphaPlus and Metatrak II the sound quality is superb, especially on instruments such as bells, organ and harpsichord. Tones are rich and clear. The two foot pedals on the synthesizer allow you to slur the notes and vary the pitch. Even the cricket, woodpecker and ocean sounds seem authentic.

As for documentation, it would have been nice if alphaSyntauri had included an entire table of contents instead of creating a separate one for each of the three sections. With so many lessons and different disks, a comprehensive table of contents is needed. A troubleshooting guide is featured in each section, but is not comprehensive enough.

We found a couple of bugs in the demo disk of the Metatrak II. When we hit the space bar to continue to the second screen of the demo, the program jammed and snowflakes appeared on the screen. And when it told us to record music, the keyboard would not create any sound.

We called the company three times in one day for some help; each time an answering machine said its lines were busy. Even after we left a message, nobody bothered to call us back. When we phoned again early the next day, the same thing happened. If you need technical

The alphaPlus series allows you to play back prerecorded tunes, play along with the music or improvise.

the three series, aren't any better. Designed for live performance situations, Metatrak II delivers all the instruments included in Simply Music and alphaPlus and many of their features.

Additional capabilities include editing facilities and echo/repeat functions. You can even create a drum machine that sounds like a host of percussion instruments. To see a finished version of your masterpiece, you can print the music on paper.

Granted, Metatrak II does live up to its

support for this program, maybe you're better off writing a letter to the company — it seems to be deaf to the telephone.

Do you really want to buy the alphaSyntauri music system? Learning to use the product takes time and patience. Getting support from the company will be a drag. But after surmounting those hurdles, you'll find that the software is a dynamic tool that works best and provides the most pleasure for the person who is both an adept musician and a seasoned computer user.

EINSTEIN SPELLER

Spelling-checker software for proofreading documents

BY GIOVANNI PERRONE

Contributor

It is quite surprising how many errors a good spelling-checker program can find in that completed document of yours. The problem with using the Einstein Speller to check for those mistakes is the number of errors you will find in the program.

When it's working, the program does a fine job of spotting numerous kinds of mistakes. We did find several instances, though, in which the program failed to work; in some cases, the errors indicate incomplete programming — the publisher obviously hasn't yet worked all the bugs out of this product. As the package is potentially useful, we hope that the company will quickly fix these problems.

The Einstein Speller is designed to be a companion to the Einstein Writer word-processing program (reviewed in *InfoWorld*, February 27, 1984) or other word processors that run on the IBM PC or PC-compatible computers. The Einstein Speller is menu driven and, overlooking the errors we discovered, easy to use. The program checks the words in your document against a dictionary of about 40,000 specially selected, frequently used words. You can also create a user dictionary of your own special words and specify that the Einstein Speller include these, along with its dictionary, for spelling checks.

The program scans your document for errors on the screen, so you can watch the Einstein Speller check each word. The program can operate in such a way that you can make on-the-spot corrections to your text and additions to your user dictionary. You can also specify a new filename for the corrected version of your document, and the Einstein Speller stores the corrected version in the new file upon completion of its spelling check.

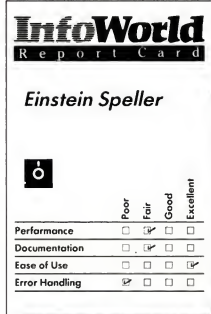
In addition to checking spelling, the Einstein Speller can identify such things as repeated words, incorrect placement of quotes, inappropriate use of hyphens and omission or addition of capitalization.

If you choose, the program can automatically check up to 20 separate documents in succession without your

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involvement. The Einstein Speller produces an error-report file that you can print when it has completed the automatic checking or when you interrupt it. The document so checked does not contain special characters to mark misspelled words as does MicroPro's SpellStar. Instead, it is presumed that you will read the error report and use your word processor's Find (or Search) feature to locate the offending word and correct the error. (Remember, this is an alternative to the program's Interactive mode, in which you can correct the error on the spot.)

Menu operation is fast and efficient. As with other programs in the Einstein series, you select menu items by moving the cursor with cursor keys until you reach the desired item. Alternatively, you can press



Summary: Einstein Speller might rate your attention if the publisher had paid closer attention to quality control. The program is filled with errors, some of which cause the machine to fail. It should not be on the market in its current form.

Product details: List price, \$150. Available for IBM PC and PC compatibles running DOS 1.1 or later. Requires 128K random-access memory; at least one disk drive; printer optional but recommended. Published by The Einstein Corporation, 11340 W. Olympic Blvd., Los Angeles, CA 90064; (213) 477-6733.

the key corresponding to the first letter of an entry to highlight your choice. Submenus then appear and ask you for additional details when the program requires them.

The Einstein Speller responds to the clear menu choices in a natural and rapid manner. It is so natural, in fact, that you can almost disregard its users' guide from the start.

When you begin the spelling check, the screen display is divided into three parts. The first, a text-viewing area (the top 13 lines), displays a portion of your text as the program is checking it. The program shows the target word highlighted in reverse video. Next is the error-notification area (four lines between two framing lines), which displays the target word and the problem associated with it when the reverse-video marker stops. Problem messages include phrases such as "Word not found in dictionary," "Possibly a repeated word" or "Possible capitalization error." The last part of the display is the options area where, depending on the problem encountered, options appear with the first letters in reverse video. You enter the highlighted letter to select an option.

Typical options presented are: "Replace target word with a numbered alternative," whereby you select the number corresponding to the alternative spellings that the Einstein Speller has found; "Type in the correct spelling yourself" provides for custom word adjustments; "Add new words to user dictionary" allows you to temporarily (for one document only) or permanently (all future documents) expand the dictionary; and "Save target word for printed error report," which allows you to postpone the disposition of the problem until later.

The learning time you require to use this program is minimal and you don't need a tutorial. Relearning for infrequent users is not a problem, especially if you are using the Einstein Writer, which has the same command structure.

Now we get to the meat of the matter: although the program's idea is good, the execution is lacking. Faulty error handling and problematic programming plague this package. Specifically, we encountered the following problems:

- While attempting to update the dictionary from the Dictionary Maintenance routine, with the update file on the B drive, the program stopped running, called in the operating system and presented a "Return without GOSUB in line 32,932" message.

- In one instance, we were unable to change our choice from No to Yes while we were using the "Keep uncorrected document file" function.

- When we tried to perform Dictionary Maintenance with the B drive as the

selected drive, the program gave us a "File not found" message along with instructions to place the correct disk in that drive. We had to reset the computer in order to escape the ensuing program loop.

- While we were attempting to use the Spelling Settings command, we inadvertently pressed an incorrect key and the message "Division by zero on line..." appeared over the menu. The system failed and we had to shut it off completely in order to start using it again.

- While we were attempting to cancel the Spelling Settings choice the program failed and we were required to reset the system.

- When the program completes an automatic spelling check, a message appears "Press P to print error report." If you press the key when your printer is off, the Einstein Speller does not check your document and displays an "Error report printed" message anyway. It does not allow you to discover the problem first, turn on the printer and try again. You can still print the report, but you must use an operating-system command (type filename.ERR), which is an undesirable alternative.

These problems, some serious enough to cause the computer itself to fail, greatly hampers the product's performance and

Error-handling problems of the Einstein Speller destroy your confidence in the program.

detracts from an otherwise good program. In fact, certain errors, notably those that result in messages such as "Division by Zero" and "Return without GOSUB," should never be found outside the programmer's shop and indicate a sloppy job of quality control.

The documentation provided with the Einstein Speller is clear, concise and readable. Its organization is logical and thorough. It does, however, comprise only 52 pages — it includes no index and no appendices and contains insufficient detail regarding the structuring and use of dictionary files. It also contains no information regarding the error report (or optional printing). Space is wasted with

author biographies when it could be usefully filled with the missing information.

The Einstein Speller has some serious error-handling problems. These problems significantly degrade performance and quickly destroy your confidence in the product. Once the problems are corrected and more complete documentation is included, it will be an excellent package. This release is premature, though, and it should not be on the market in its current form.

HARDWARE CAPSULES

Every week we present a summary of significant products we have reviewed over the past months, including the date our full review appeared. The list will be updated periodically to reflect the rapid changes in the computer industry.

ACE 1200 (Franklin) — Improvements over the Ace 1000 still leave this almost Apple-compatible machine a bit short of the mark. Documentation is adequate only for plug-and-play types. (12/26/83)

Actrix (Actrix) — Good choice for those who don't like choices. This self-contained CP/M computer includes a built-in printer and modem. But at 33 pounds, it's not very transportable. (4/9/84)

Apricot (ACT) — This splendidly conceived and executed product is IBM compatible and then some. It deserves the consideration of anyone looking for a serious business system. (4/2/84)

Compaq Plus (Compaq) — The original IBM PC-compatible transportable now has a built-in hard disk. It works as solidly as the original. A good buy in a very crowded marketplace. (3/19/84)

Dragon (Tano Microcomputer Products) — Despite a toy-store appearance, this low-cost home computer has a lot of muscle. Its major drawback is an ill-designed keyboard. (1/30/84)

HP-150 (Hewlett-Packard) — This machine proves that there are intelligent alternatives to the

IBM hoopla. With an innovative touch screen and a lot more, this microcomputer gives you a solid name and plenty of byte for the buck. (3/12/84)

Kaypro 10 (Kaypro) — A transportable, rock-solid computer with a 10-megabyte hard disk built in. A terrific bargain for what this CP/M machine gives you. (10/31/83)

Macintosh (Apple) — Apple's new computer is probably the easiest-to-use, most powerful and innovative personal computer. The Macintosh could use added memory and a hard disk but overall is superior to just about every other personal computer. This is the computer that will challenge IBM's dominance. (3/26/84)

NEC 8201 (Nippon Electric Company) — A worthy competitor to the Tandy Model 100, this lap-size portable is more expandable but has less built-in software. (3/19/84)

Premium Softcard IIe (Microsoft) — Expands an Apple system with a Z80 coprocessor, 80-column display circuitry and 64K additional RAM. (2/6/84)

Speechmaster (Tecmar) — An add-in board that uses some of the latest available technology to generate speech, if you're willing to experiment. (2/13/84)

Spark Jet JP 101 (Olivetti) — Ink-jet technology is coming, but it isn't here. Poor print quality and hard-to-find parts point to other printers in the same price range. (12/19/83)

Spirit-80 (Mannesmann Tally) — This is a low-cost dot-matrix quality printer with good special features such as dot-addressable graphics and multiple fonts. (11/14/83)

Teletex ITX-1014 (Teletex) — If you can manage the horrible documentation, you'll get a great letter-quality printer cheaply. (12/5/83)

Ti-855 (Texas Instruments) — Hybrid printing produces drafts quickly and gives numerous letter-quality fonts, which are supplied as ROM cartridges. A solid performer at a reasonable price. (12/5/83)

Ti Professional (Texas Instruments) — Can anyone go one better than IBM? You bet! Superior graphics, an excellent keyboard and IBM PC compatibility. (12/19/83)

FOUR MARKS: Top notch product
THREE MARKS: Recommended
TWO MARKS: Try before you buy
ONE MARK: Not recommended

YOU KNOW, ROBERTS,
IT WASN'T MY IDEA
TO HIRE YOU.

I'M NOT IN BUSINESS
TO DO FAVORS. I'VE GOT
BUILDINGS TO PUT UP.

OH, I TOOK YOU ON, SURE,
BUT I NEVER BELIEVED
YOU COULD MAKE IT.



BACKBREAKING WORK,
ROTTEN WEATHER...
LOTS OF GUYS JUST
CAN'T CUT IT.

BUT YOU DO GOOD
WORK, ROBERTS.

AND STARTING MONDAY,
I KNOW YOU'LL BE
A GOOD FOREMAN.

ALL I EVER
NEEDED WAS
A CHANCE.



EVERYBODY DESERVES A CHANCE TO MAKE IT ON THEIR OWN.

The National Urban League is dedicated to achieving equal opportunity. And there are things you can do to help.

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National Urban League

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New York, N.Y. 10021

I want to help. Please send me more information.

Name

Address

City

State Zip

Toshiba P1350 (Toshiba) — This three-in-one dot-matrix printer is usually fast and gives excellent print quality. Its documentation is incomplete and inadequate, though, and you may have trouble reaching some of the printer's switches. (2/6/84)

Transtar 130S (Transtar) — For a reasonable price you can get yourself a well-made, letter-quality printer. Best suited to low or moderate usage. (1/30/84)

TRS-80 Model 4P (Tandy Radio Shack) — The company's first transportable is an outstanding machine at an excellent price; a better Model 4 in a smaller case. Otherwise, it's the old, reliable Tandy. (11/21/83)

Xerox 1810 (Xerox) — A lap-size portable with some problems. It runs a poor second to other lap machines because of its limited three-line display and short battery life. (2/27/84)

Zenith Z-100 (Zenith) — Dual-processors make this machine worth its high price tag. It runs CP/M and MS-DOS programs, and its high-resolution screen and great keyboard gain it high marks. (11/7/83)

SOFTWARE CAPSULES

Atari Logo (Atari) — Despite its speed and certain error-handling problems, this is a solid example of the popular educational programming language. (1/23/84)

Atari Writer (Atari) — Adequate for casual word processing, but on most Atari machines you can't use this to write documents longer than 20K without chaining several files together. You also can't display more than 38 characters across at any time. (11/14/83)

BPI General Ledger (BPI Systems) — A comprehensive accounting package, it covers all the financial bases. Speed, documentation and support are problems. (2/20/84)

BPS Business Graphics (BPS) — Business users who need a variety of graph-making abilities at the office can't go wrong with this business package. (10/31/83)

Condor 3 (Condor Comput-

er) — Data-base management is less flexible and slower than dBase II and almost as expensive. But English commands and copious help make it a choice for novices. (2/20/84)

DB Master (Stoneware) — In response to user feedback, the latest versions of this data-base-management system are more flexible and easier to operate, especially in the area of report generation. (12/26/83)

DR Logo (Digital Research) — An excellent example of this educational programming language. Colorful and easy to learn, it should tempt those who have never used a computer. (2/13/84)

Friday! (Ashton-Tate) — An easy-to-use file-management and reporting program, it suffers from a lack of speed due to a design suited to both 8- and 16-bit machines. (10/31/83)

Harvard Project Manager (Harvard Software) — This effective transfer of proven manual project-management techniques such as CPM and PERT to personal computers suffers only from some inflexibility and fair documentation. (4/2/84)

KnowledgeMan (Micro Data Base Systems) — A relational data-base manager based on IBM's mainframe Structured Query Language, the program is suitable only for experienced users. The documentation is a big drawback. (2/6/84)

Knoware (Knoware) — An intuitively designed and visually attractive training program aimed at reducing computer phobia for professionals. One of the best on the market. (3/19/84)

1-2-3 (Lotus Development) — The first integrated package is a super spreadsheet with speed, power and graphing and data-management functions. Deservedly king of the hill. (1/30/84)

Magic Desk I (Commodore) — An attempt at placing an icon-based integrated system on a low-cost machine, only one of the several functions is now implemented. It is only passable at creating documents. (2/13/84)

Multiplan for the Macintosh (Microsoft) — Our software product of the year in 1982 has come back as an even better spreadsheet, thanks to the Macintosh. An all-around excellent product. (4/9/84)

Office (Emerging Technology

Consultants) — Integrating electronic filing cabinets with limited word processing, this visual program is an adequate low-cost file manager that has some practical limitations. (3/12/84)

PFS:Write (Software Publishing) — Simple-to-use, inexpensive word processing not cluttered by seldom-used features. You can use it to combine text with graphics, tables or information from other files. (11/14/83)

PowerBase (GMS Systems) — A complete, effective, easy-to-use database system that you can use productively in a short time. It lets you concentrate on how to solve your problems, not on the mechanics of a data base. The documentation is great. (3/12/84)

R:base 4000 (Microrim) — A relational data base with its roots in minicomputers that works remarkably well on micros. It is fast, flexible and combines ease for the novice with power for the expert. (12/26/83)

SuperCalc3 (Sorcim) — Integrated software that turns a first-rate spreadsheet into an impressive collection of modules including color graphics and data management. Excellent documentation and reasonably priced. (1/23/84)

SuperWriter (Sorcim) — This word-processing program excels at helping you create complicated document formats and includes a spelling checker. It has great error handling. (2/27/84)

TKISolver (Software Arts) — Version 1.2 alleviates problems found in previous versions of this equation-solving tool. It is much faster and its Help facility is a better learning tool. (1/23/84)

Visi On (VisiCorp) — The long-awaited applications environment measures up, with good visual interaction, rapid transfer of data and good ease of use. For large spreadsheets, though, it can be slow, and bringing in information from the outside could be a problem. (3/12/84)

Word (Microsoft) — A genuine step toward creating software for tomorrow's hardware. We have some philosophical differences with the tile-window interface, but it formats documents any way you could possibly want, even with a typesetter. (12/12/83)

Word Vision (Bruce and James) — One of the few low-cost word processors with all the bells and whistles. The publisher has taken great pains to make it easy to use. (12/19/83)

REVIEW RESPONSES

Power-Base documentation

Your review of Power-Base (March 12, 1984) was, as usual, of excellent quality and quite informative. I was, however, somewhat confused by the Report Card section, which stated that "Power-Base has also achieved a new level of quality in its documentation," while in the Report Card itself documentation was listed only as Good.

This must have been an editorial error. As a professional in the field of data processing and technical writing, I am only too well aware of how easily such errors can slip by. However, I do think that a prominent correction in the earliest possible issue is called for in this case.

John Mendenhall
Vienna, VA

As a documentation consultant, I have been reading *InfoWorld's* software reviews regularly. In the past, the reviews have usually presented consistent information. In the March 12, 1984, issue, you gave the Power-Base documentation a glowing review, yet rate it only Good on the Report Card. Since I have seen other products with less than perfect documentation receive Excellent grades, I wonder what criteria are used to establish the ratings. It certainly seems that Power-Base deserves a higher mark.

Cindy E. Gray
Somerville, MA

As stated in the body of the review, the written documentation for the product is of very high quality. The lack of adequate on-line documentation, however, prevents us from giving the product a documentation rating of Excellent. — Editors.

MacSaga continues

I enjoyed your review of the Macintosh (March 26, 1984). I have played with a Mac twice now and have found it fascinating. But I can't help feeling that Apple bobbled a great idea for lack of a follow-through. You can't get letter-quality printing with Mac. MacWrite doesn't allow ten-point type. Document size is extremely limited. The program disk has both MacWrite and MacPaint, severely limiting document storage.

Apple would have done better for itself had it rectified these things. First, why not have a second built-in disk drive? Apple

could have afforded it, since Steven Jobs wanted to charge only \$1,900 for Mac, not the \$2,500 Apple ended up charging. Second, why not have a word-processing program that creates disk-resident files so that the size is limited only by the disk capacity? I realize that slows things down somewhat, but I presume the 32-bit processor would keep it from being too slow. Third, why is there no parallel port or letter-quality capability? Didn't Apple realize that this deficiency would hurt its effort to break into the business market?

I truly have enjoyed working the Mac. But as a writer, I don't see how it can beat my Kaypro IV for practicality (not to mention price), even if it is cuter. Heck, sooner or later there'll be a mouse for my machine.

Sheldon L. Richman
Springfield, VA

I was rather amused and amazed by the letter from Mr. Fred Ransdell published in the March 26, 1984 issue of *InfoWorld*. Mr. Ransdell attempted to pass himself off as being computer literate but failed so badly that I was embarrassed for him.

Properly formatted, he should have had 183K left on his disk for his "program." A MacWrite start-up disk will have 127 to 204K remaining for data entry, depending on the fonts used. His "five foreign languages" consist of 26 characters, many of which are commonly used in American business. He was correct in that if he had less than 12K of space left on a disk, he could not save a letter that was more than 12K in length. And he received an on-screen "warning" about that. Amazing!

He complained about the lack of software... for a new machine that had been on the market less than three weeks. He got twice as much "free" software as I received with my IBM PC. And the Mac's software capabilities far exceed that of any \$100 program currently available for other units on the market today. The pricing he quoted was inaccurate and his "great respect for programming on disk" was pointless.

Mr. Ransdell bought the Mac with a single drive, like most base units, and should not expect it to have the capabilities of a dual-drive system. He also got, in the bargain, a monitor, 128K random-access memory, 64K read-only memory, a 32-bit central processing unit, graphics, serial ports (RS-422), disk-drive port, a mouse, windows, printer port, clock/calendar, sound generation, transportability and more; most of which are either expensive options or simply not available on other computers.

I even understand that the manual is quite good. I don't know, as I've never taken the wrapper off mine. Unfortunately as it may be, it appears that Apple has

overestimated the number of "knowledgeable workers" out there.

Dan Noland
Tulsa, OK

How can you possibly give the Macintosh the highest possible marks when it lacks such basic computing amenities as a numeric keypad, cursor-movement keys and — the most "insanely great" omission of all — the inability to accept *any* letter-quality printer.

But perhaps I'm just very old-fashioned.

Peter A. McWilliams
Los Angeles, CA

Mac Multiplan

The brevity of the review of Multiplan for the Macintosh (April 9, 1984) was a disservice to the reader. Many of Multiplan's outstanding features were not mentioned or were discussed so superficially as to be of little value to prospective purchasers.

Mr. Neudecker alluded to the fact that versions of Multiplan dated January 24 have a "few errors." My experience with that version was totally unsatisfactory. I experienced glitches ranging from cryptic print-error messages to total system failures. The version of Multiplan I am now using is dated January 31, and while somewhat improved, still exhibits problems. Microsoft says it knows of the problems and all registered owners will be receiving an updated version in three or four weeks.

William Luckie
Simi Valley, CA

As noted last week, the product does have some flaws that were not corrected in the January 31 version. Microsoft says it will provide properly working versions free of charge to those who bought earlier copies. — Editors.

Publisher responds

As publishers of Knowledge Manager, we would like to enter two dissents to your otherwise excellent review of our package (February 6, 1984) and to the somewhat less positive Capsule Review that you presented in your March 12th issue. Specifically, I contest the statements that "the program is suitable only for advanced users," and "the documentation is far too technical in tone for beginners... a bit of a drawback."

While I recognize that these are matters of individual judgment, "Advanced users" is a very broad category. We make no bones about the fact that the



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power of the Knowledge Manager entails some complexity. However, many novices have found it well worth the extra effort to master our package.

The bottom line is that, yes, the Knowledge Manager is more complex than Lotus 1-2-3 or dBase II, just as a Boeing 747 is more complex than a World War I biplane. But unlike the 747, the Knowledge Manager can be flown safely and profitably by novice pilots.

Documentation is a problem for many high-tech products, not just software. From experienced users we've received extremely favorable comments on our Knowledge Manager documentation and reference manual. Nonetheless, we recognize that not everyone can get maximum benefit from the way our documentation — and that of most other software vendors — has been presented in the past. Therefore, we are constantly working to make our documentation more user-friendly and are, at this very moment, readying for publication a Knowledge Manager tutorial manual for novice computer users.

Even now, it's worth pointing out, Knowledge Manager documentation has received some very nice reviews: Shawn Bryan, writing in *Desktop Computing* (December 1983), notes that "The documentation goes a long way to helping users come to grips with a very powerful program." Another reviewer, in *Victor Talk*, says that "The user manual was straightforward and included a useful glossary and index."

I hope this clarifies the two points referenced in your Review and Capsule sections. We continue to value and respect your fine editorial product.

Scott D. Palmer
Micro Data Base Systems
Lafayette, IN

Corrections

In our review of Open Access (April 16, 1984) we stated that "the selection criteria is limited to simple logic with no levels of nesting."

This is incorrect. Indeed, many levels of nesting are possible, such as: A+(B+(C OR D)). InfoWorld regrets the error.

In our review of CompuServe (April 23, 1984) we inadvertently assigned an overall grade of four winged feet to the service. In fact, the rating should only have been three winged feet.

InfoWorld welcomes comments about its reviews from readers. Please address your correspondence to the Technical Editor, InfoWorld, 1060 Marsh Road, Suite C-200, Menlo Park, CA 94025.

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John C. Dvorak

MASS-STORAGE MANIA



IBM has placed an order for 1.5 million digital audio disk players from an unspecified Japanese source. The order was made by the personal-computer division in Boca Raton, Florida.

It's obvious that IBM plans to use these gizmos as mass-storage devices. Hundreds of megabytes are available on the removable platter. Each platter can be manufactured and then sold for about \$30 retail.

Some speculate that IBM will put a complete Unix system on a disk with hundreds of utilities. Others feel that IBM is about to decimate the competition by bundling a few hundred megabytes of free software and a special new "win-downing" operating system.

The most obvious use for these things is for enormous on-line data bases. No matter what the initial plan, the implementation of a standard interface for digital audio disks to computers, with the resultant software, will turn the personal-computer market on its ear.

The so-called compact audio disk has been shown at the Consumer Electronics Show for three or four years. Last year the place was flooded with them. Apparently the bottleneck is still in manufacturing the laser-read disks themselves. IBM was one of the early investors in the pioneering of full-size laser-disk technology when it dropped out to let Japan pave the way.

This technology gives music a signal-to-noise ratio of about 90-95 decibels. Translated, that means no surface noise and more realistic dynamic range. In other words, the music can get very soft — then very loud.

I remember back in 1978, when this technology was coming out "in the next two weeks," how pundits were describing the numbers of gigabytes that could be stored on one of the big two-sided disks. It was years before anyone could get them to work at all, let alone store data.

So now along comes the compact or digital audio disk (CAD or DAD). It holds about 45 minutes of music on one side. If we multiply 45 minutes $\times$ 60 seconds to the minute $\times$ the average sampling rate of 44,000 times per second $\times$ 2 channels $\times$ 14-bit words, this equals over 3.3 gigabits or around 400 megabytes per side. And these are not slow devices. It transfers a byte of data in about 6.5 microseconds. Compare that to a floppy-disk byte of data in 32 microseconds and a hard-disk byte of data in 1.6 microseconds.

So we have a powerful mass-storage device that reads data from a disk that can be punched out like a phone record — pop, pop, pop. Couple that with an IBM blessing and automatic standardization and that means it's time for the strategic planners to get to work.

Curiously, Gary Kildall announced at the West Coast Computer Faire that Digital Research was finishing some

About half the people hated it and half loved it.

There didn't seem to be a consensus on why Apple is successful, except that Apple was in the right place at the right time. (I told you Steven Jobs was a real-life magician!) On the other hand, with almost no exceptions, the throng of Delphi-ers all said that IBM is successful only because of its name. I'm not kidding.

At the West Coast Computer Faire I noticed a lot of little vendors showing tons of Japanese disk drives. Everyone from Tec to Teac to Toshiba is making them. I wondered about the quality, so I visited my friend the Old-Timer. After all, these things are selling for around a hundred bucks each — what a deal.

After calling me a "whippersnapper" (whatever that is), the Old-Timer said that there is a peculiar phenomenon happening with most of these drives.

"First, let me say that it's this simple — the Shugart 465 is the best drive on the market today, along with its Mashusita look-alike," he said while shaking his mechanical pencil.

"Those new drives haven't got enough torque in the motors, so if they meet any disk resistance, they won't spin. But the funny thing about most of them is that the collet (the thingamajig that grabs the disk hub) has a tendency to chip off little pieces of oxide. The piece of oxide finds its way to the head, where it welds itself. Then it becomes like a piece of abrasive and gobbles up the media — ha, ha, ha, ha."

The Old-Timer went into an uncontrollable fit of laughter and I left.

When I got back to my electronic cottage I found a report glued to the back of my notepad. It was titled: "Something Strange is going on in the Parts Business."

Did you know that the American semiconductor companies have sold out their 1984 production of microprocessors, memories and LS (Low-power Schottky) parts? Meanwhile, the yen is headed up, putting further cost pressure on manufacturers that use Japanese parts. But according to this report, the so-called gray market seems to have evaporated. Also, put in the brew that a couple of major micro PC-look-alike failures are about to happen, and we may see cheap liquidation chips all over the place. How about some input from my readers on this mess?

There is a write-once laser-disk technology that is floating around.

sort of an interface to the laser disks, and I understand that JVC and Sony are designing new operating-systems techniques that somehow utilize the laser disk.

And remember, there is a write-once laser-disk technology that is floating around and may be part of IBM's overall strategy. I'm putting the Delphi Group to work on this one.

Dvorak's Delphi Group Interim Report. I was flooded with interest. Maybe swamped is a better word. So I'm in the process of creating a mailing list of Delphi-ers and we'll get to work. The results of the poll I took concerning the mouse and the success of IBM and Apple came up with some fascinating results. Basically, the mouse will be a success in the sense that it may become a standard feature on computers like a cigarette lighter is on a car. If you don't want it, you don't use it, but it will be there anyway.

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